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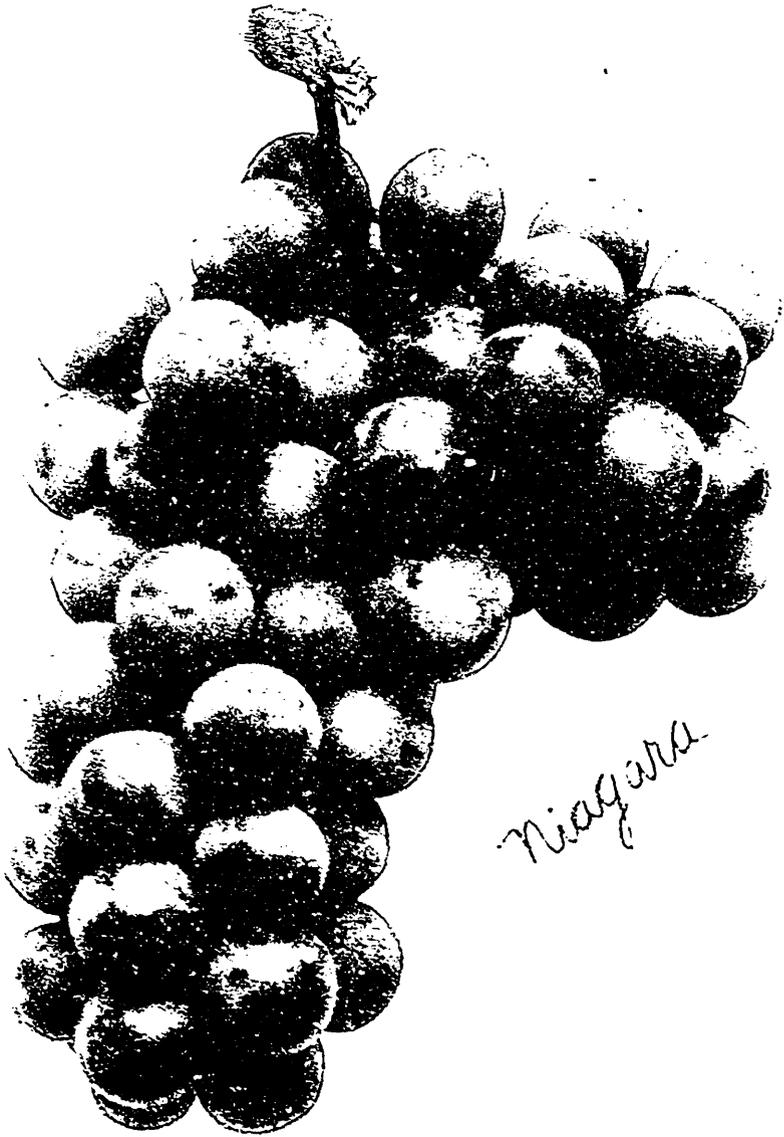


FIG. 2531.

THE CANADIAN HORTICULTURIST

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THE NIAGARA GRAPE

PERHAPS no grape, of British or American origin, was ever introduced with greater flourish than the Niagara, and perhaps none ever sustained a reputation more constantly or gave its introducers greater financial gain. Although the Concord, among the black grapes, stands side by side with this "Queen of White Grapes," in the vineyards and in the markets of Ontario, yet the originator of the Concord, Mr. Ephraim Bull, of Concord, Mass., lacking that magic touch that transmutes to gold, died a poor man; while Messrs. Hoag & Clark, of Lockport N. Y., who introduced the Niagara, made the enterprise a great financial success.

To-day the Niagara is recognized as the leading commercial white grape and has been planted more widely in Ontario vineyards than any variety except the Concord. For dessert purposes it is second rate, and must be well ripened to be even so classed; therefore it should not be planted in the colder sections, unless it be in certain favored localities.

The Niagara originated near Lockport, N. Y., in the year 1868, from seed of the Concord, and the vine bore its first fruit in 1872. The fruit was of such excellence

that Mr. Hoag, with growing confidence in its future, raised a few hundred vines and planted the first Niagara vineyard; at the same time giving a vine each to some prominent fruit growers, on whose reports he could have confidence. Later on he formed a company known as Messrs. Hoag & Clark, and the firm began to propagate the new grape on extended scale, taking great care to prevent the propagation of it by others, in order that they might themselves control the whole stock as long as possible. For many years they succeeded in their plans, and, instead of selling vines outright, they furnished them to planters on condition that the wood should be the property of the firm for a certain number of years, and that the fruit should be shared between the firm and the grower.

In the Canadian Horticulturist for January, 1880, we read as follows: "No plants of the Niagara grape have as yet been offered for sale, but Mr. Hoag is now propagating it extensively, and in due time it will be upon the market. The vine is an unusually strong, vigorous grower, as we had ample opportunity of observing when passing through Mr. Hoag's young vines, while the leaves are large and leathery, well calculated

to endure our sudden alterations of temperature and to resist the attacks of mildew. We were not able to find a leaf that showed any sign of suffering from any cause whatever. The bunches are of good size and very compact. The berries are of the same size as the Concord, and, when perfectly ripe, of a light, greenish, amber color. The skin is tough, does not crack so far as we can discover, and seems likely to bear handling and carriage well. The pulp is soft, juicy, sweet, of good flavor, with a little touch of that peculiar muskiness which shows its American origin. The fruit begins to ripen with Hartford Prolific, and will continue to hang on the vines, not only without injury but gradually improving in sweetness and richness, until hard frosts indicate the near approach of winter. We shall be very much disappointed if this grape does not take the same place among white grapes as the Concord has taken among the black. Everything about the vine indicates constitutional health, vigor and hardiness."

How truly have these prophetic words of Mr. D. W. Beadle, written twenty-three years ago, been fulfilled regarding this grape!

Of course, like all other introducers of novelties, Messrs. Hoag & Clark made some rather extravagant statements, as for example, the following paragraph: "The Niagara grape grows, thrives and produces its enormous crops in the cold of northern Canada, the heat of South Carolina, from New Jersey to Michigan, wherever planted, and can be shipped to the most distant markets; it is equalled by no other grape for vineyard planting; and every farmer in grape growing sections should have a large and substantial vineyard of Niagaras. If the instructions we give for its management are observed, it will soon pay off the mortgages and leave a balance to invest, besides furnishing a genuine and attractive business for the boys who get tired of the old ways of

small or no profits and leave home for other fields." It is quite true that very high prices were obtained for this grape when it was first placed upon the markets, the average being about ten cents a pound; and certainly, could such a price have been maintained for the Niagara grape with its enormous crops, farmers would very soon have made fortunes out of it; but unfortunately, as soon as the large plantations came into bearing, the price dropped to about the level of the Concord.

For several years we have been trying to open an export trade in the Concord and Niagara grapes, hoping that a market might be encouraged for them in Great Britain, in view of the high prices prevalent there for their home grown varieties; but so far we have been disappointed, and our shipments have brought nothing in return to pay for the grapes, after the expenses were fully met. Strange an Englishman should be so different here from the same man at home, for walking through our vineyards we notice he plucks and eats our Niagaras with as keen a relish as any native born Canadian; while in England he despises these grapes and lets them go begging for a buyer at twopence and threepence a pound, preferring to pay two shillings a pound for Black Hamburgs!

The vine of the Niagara is as healthy and vigorous as the Concord, and about as productive; the bunches are very compact and at the same time very large, sometimes measuring six inches long by four across and weighing nearly a pound. The berry is roundish; in color, pale green, turning pale yellow at maturity, and is covered with a delicate whitish bloom; the pulp is soft, juicy and sweet, of good flavor when fully ripe, but with a muskiness. The quality for desert purposes is very good when fully ripe, and for canning it is counted among the best.

REPORTS ON THE NIAGARA GRAPE.

R. B. WHYTE, Ottawa:—The Niagara grape is not considered satisfactory for this

district. The vine is a strong grower and sets a heavy crop, but our season is too short to ripen it perfectly, and there is not enough heat to give it its best flavor, poor as that is. The year before I threw it out, it mildewed badly with me, but that is not general. Grape growers here consider it too poor in quality for home use, and too uncertain for profit. Moore's Diamond is superior to it in every way for this district.

HAROLD JONES, Maitland:—In this district the Niagara is a productive variety, and forms large compact bunches, but only in the most favorable positions as regards soil and exposure does it come to full maturity. In a few cases it has been considered profitable to raise for sale, but it cannot compare in quality with the same variety grown in the Niagara peninsula, which it

has to compete against in our markets. It has not become a general favorite for home use. To become popular here it must be classed among the very earliest of the ripening varieties.

JAS. S. SCARFF, Woodstock:—In this district the Niagara seems to be one of the most profitable white grapes grown, because it produces such enormous crops, and besides it is a good shipper. It ripens both its wood and its fruit very well in this locality.

W. W. COX, Collingwood:—The Niagara does well in this district; the wood ripens well, and the fruit is abundant and good. I planted a vine ten years ago in an exposed place, without any protection, not even laying it down in winter or covering it in any way, and it has borne fine crops every year.

Notes and Comments

STONEY CREEK FRUIT GROWERS.

ON the tenth of January a fine Farmers' Institute gathering was held in the new Town Hall at Stoney Creek. As we entered Mr. T. H. Race, of Mitchell, was giving an address on Apple Culture, and it was evident from the close attention given him that the speaker was touching upon certain points of great interest even in this advanced fruit district. Among those present we noticed, Mr. Frank Carpenter, W. M. Orr, Joseph Tweddle, A. H. Pettit, E. J. Woolverton, J. B. Smith, E. D. Smith, M. P., John Nash, G. Millen and M. Pettit.

STOCK AND SCION.

THE old question of the influence of stock upon the scion was up for discussion. It has been long recognized that a tree may be dwarfed by grafting it upon a

slower growing stock, as, for example in the case of the pear when grafted upon quince roots, or in the case of an apple grafted upon paradise stock. It is also evident that a tree may be rendered somewhat better adapted to circumstances by its stock, as for example the peach tree for clay soils when budded upon the plum, or on the almond for dry chalky soils; or, in the case of the pear which does not thrive on a very light dry sand, but has been made to succeed much better when budded upon the Mountain ash. Hardiness has also been gained for a tree by top grafting it upon a hardy stock, and thus a variety weak in the trunk has been made to grow somewhat further north than usual.

A more unsettled question is that of the influence of the stock upon the quality of the fruit. Fifty years ago Downing wrote,

"A slight effect is sometimes produced by the stock upon the quality of fruit," but of late our fruit growers have been observing many instances of variation in color, size and quality of the same variety which they can account for only by the difference of stocks.

THE TOLMAN SWEET STOCK.

AT this meeting Mr. Race showed a beautiful sample of Ben Davis, bright in color, large in size and unusually humped about the basin. This apple he said was grown from Tolman Sweet, and he could account for its superiority only by this fact. He also showed a beautiful sample of Spy, unusually bright in color, which was grown upon a graft set twelve years ago on a Tolman Sweet, the latter being at that time only four years planted. Not only was the fruit remarkably fine, but the tree was so productive that it was necessary to thin it freely. Anyone wishing to verify his statements could see the trees in the orchard of Mr. Albert Jacobs, near the village of Blyth.

There was therefore some ground for the advice given by Mr. Race, to plant an orchard of Tolman Sweet trees on which to top graft our best commercial varieties.

IMPORTANCE OF CAREFUL SELECTION OF CION.

THE writer called attention to the importance of greater care than is usually taken in the cutting of cions for grafting. Nearly every grower must have noticed a great variation in samples taken from different trees. Greenings, in some instances, are very evenly rounded in form, and have a beautiful red cheek, while in others they are somewhat ribbed, and entirely lacking in color. The King apple, usually a scant bearer, has in some instances shown an inclination to produce more abundantly; and the Snow apple is often so distinct in coloring that many have claimed that there are distinct varieties. It is there-

fore evident that there is individuality in trees as well as in animals, and, if we would attain the highest success in fruit growing, we must propagate these individual excellencies, by a more careful selection of cions.

DOUCIN STOCK FOR THE APPLE.

IN this connection we note that Prof. Beach, of Geneva, N. Y., has been experimenting with dwarf apples with promise of advantage in these days when we must spray and fumigate and thin and treat so much more carefully than in former years. It is stated on good authority that in England the planting of apples on dwarf stock is increasing of late years for commercial purposes. Here is what Mr. S. T. Wright, a prominent English fruit grower, says on this subject: "I do not hesitate to say that the most paying system of cultivating apples is the growing of a limited number of varieties as dwarf trees on a soil which has proved capable of growing full crops of large apples. The prominent advantages of dwarfs are, (1) Quick returns; standards must do exceptionally well to produce anything like a paying crop in twelve or fourteen years, while dwarfs begin to bear the second year after planting; (2) all work can be done, from the ground level, while standards require ladders. Mr. L. R. Castle, in an essay before the Royal Horticultural Society, states that the most prolific varieties of apples on dwarf stock, planted ten by ten feet, or 435 to an acre, taking an average of ten years, will yield from one-fourth to one-half bushel per tree per year, or from one to two hundred bushels per acre, while well established standards would produce 280 bushels per acre, or more."

Whether on account of the insect and other pests which we have to treat, it is not desirable to plant dwarfs in Ontario, is of course still problematical, but it is evidently worthy of consideration and perhaps should be well tested at our fruit stations.

A WONDERFUL APPLE CROP.

"APPLES can be made to pay," said Mr. E. D. Smith, Winona, "and the success of Mr. Joseph Tweddle, Fruitland, in taking in hand several orchards which had been neglected by the owners until they were a mass of wood, tangled together and left without defence to the ravages of insects and fungi, is a proof of my position." A few years of careful cultivation, pruning and spraying had brought these orchards into fruitfulness, and well repaid Mr. Tweddle for his speculation, and the owner for his investment.

Mulching versus cultivation for an apple orchard was also discussed, and, as Mr. Smith stated, the former is no doubt ideal, providing a sufficient quantity of material is at hand. It saves a great deal of labor and it does not injure the tree roots. Mr. Race objected strongly to deep ploughing in an orchard because it disturbs the young rootlets which are at work drawing moisture and nourishment from the soil.

In illustration of what can be done in apple growing, if the orchard is properly cultivated and sprayed, Mr. Smith cited one he had visited by request last summer. It was situated in New York State between Lockport and Rochester. He found fifty acres of Baldwins, every tree a picture and carrying over ten barrels to a tree. There were only twenty trees to the acre, but they reached an immense size, and were weighed to the ground with their enormous load of apples. It was estimated that the yield would not be less than 10,000 barrels of apples, and all perfectly free from scab; the crop must have given the owner a small fortune in a season like this when prices have ruled so high.

The only explanation of this phenomenal success given by the owner was, that for the past seven years he had sprayed regularly and faithfully; for previously he had had very little fruit, but since he had given

his orchard this treatment, he had never failed to have a good crop.

GOOD VARIETIES OF GRAPES.

MR. E. D. SMITH, of Winona, was asked to talk on "What varieties of fruit to plant to suit the requirements of the trade." In speaking of grapes, he believed that the destruction of grape vines by the cold winter three years ago had not been made up by the planting since that time, and consequently the price of this fruit had advanced, until wine makers even had been offering \$25 a ton for Concords. At this price he believed there was money in growing this variety. Compared with Niagara he had more confidence in the Concord, unless on certain rich soils in southern parts of Ontario; but, generally speaking, the Concord was more reliable. He had himself planted an acre of Campbell's Early which had this year borne its first crop. The fruit was as early in ripening as Moore's Early, the vine seems to be productive and the berry is large and of much better quality. The only defect he had observed was, that occasionally a vine had clusters with a good many small green berries, and only for this defect he would be inclined to plant this variety in preference to any other. Lindley was too uncertain. In his vineyard of 1,000 vines he had gathered one year an average of 30 pounds to the vine, for which he had netted 4c. a pound or \$1,200 for the crop; but for the succeeding two years he had only harvested about 3 pounds to the vine. He had therefore lost confidence in this grape for profit. Vergennes was profitable, but was subject to leaf blight, which, however, could be controlled by use of the Bordeaux. Of the Rogers grapes he thought highly of the Agawam, especially for sale in the Niagara district to buyers who want a good shipper. It keeps and it carries well and is therefore very suitable for sending to the North-west. In other places, where it was sold for table

use, it did not bring as high a price as its merits deserve. The same could be said of the Wilder, a much superior grape to the Concord, but in the Montreal market it sold for only about 1 cent more a pound than the latter variety, with which it is not to be compared in productiveness.

SPRAYING.

THE varied duties of the farmer, in Mr. Race's opinion, made it very difficult for him to find time to spray his apple orchard as often as is laid down in the calendars, and, since the early sprayings are the most important, he recommended that the farmer be urged to treat his trees to at least three applications, (1) with copper sulphate before the buds open, and (2) with Bordeaux as the bloom falls, and (3) again about two weeks later. "Of course," said he, "the fruit grower, who has *nothing else to do but grow fruit*, should give his trees several more applications!"

Of course the Bordeaux is much more troublesome to prepare and to apply than a simple dilution of copper sulphate and water, which may be equally effective for the first application if every part is covered. The addition of the lime, however, shows at once what portion of a branch is covered; besides it remains upon the tree a longer time.

As to the quantity of copper sulphate to use in the early applications, without lime, it has been usual to advise for Downy mildew and black rot of the grape and for the apple scab, 1 pound to 5 gallons of water, to be applied in winter or before the buds swell; and for peach leaf curl, 1 pound in 25 gallons of water. Fulton, of the Michigan Station, has been experimenting with copper solutions of varying strength for peach curl, and found that trees sprayed early with 1 pound of copper sulphate to 100 gallons of water showed no more curl than trees sprayed with 1 pound of copper sulphate to 20 gallons of water.

PLUMS OVERPLANTED.

FROM the low prices obtained for plums in our markets for several years past it is evident that we are planting too many; more than our home markets can take at paying prices. If we had an export trade in them, as we have in apples and in pears the case would be different; but even if our cold storage conditions would land them safely in Great Britain, they are not wanted there at prices that would pay for such a long shipment. Our only hope for an outlet for this fruit seems to be in the great North and North-West, as soon as better rates and conditions of carriage are provided. "In dry seasons," said Mr. Smith, "when the plum is not much effected by rot, we can handle the crop fairly well, but in wet seasons when the rot is prevalent, we can not dispose of the crop." There is room for a large quantity of Reine Claude and other plums of the Gage family for canning, for there is an unlimited market for "canned gages" both in the home and in the foreign market. Then there is another class of plums for which Mr. Smith finds a good demand, viz., such good late varieties as Monarch, Grand Duke, Black Diamond, etc. These are large and of good quality, and are suitable for shipping North and West. Then there is the Damson, a variety too much despised because of its small size; but there are people who will have this plum, and it would pay to grow more of them than we do at present.

THE KIEFFER PEAR.

"HOW is it?" some one asked Mr. Smith, "that Kieffer pears have been so unsalable this year?" "Well," he replied, "I do not think it is because they are overplanted; I think it is because of the enormous apple crop; and the canners were so busy canning up the immense quantity of seconds which they could buy at low prices, that they had no time to go into the pears.

The Kieffer is used chiefly for canning; indeed, there is no pear that is superior to it for this purpose, not even the Bartlett. As a matter of fact canners label their canned Kieffers, Bartlett, because when put up they cannot be distinguished by the public from that variety, either in appearance or in flavor. So I do not see that we need expect to see Kieffers sold again at as low a price as they have been this year." "Do you think," asked Mr. M. Pettit, "that all the canners in the country could possibly handle the whole crop of this pear that will be produced five years from now? The pear will never find sale in the open market for eating purposes, and must be grown for canning only, and I am afraid it will be a drug on our hands." Mr. Pettit spoke from personal interest, for he has one of the largest Kieffer orchards in the section. "Well, I cannot say," said Mr. Smith, "but I think it is a great mistake for fruit growers to change their notions on varieties so often. One season's experience of low prices for any special fruit will lead to its utter rejection, when perhaps the year following it will be the best paying fruit in the market. The Longhurst peach did not pay last year, so no one will plant it next spring, but if the Crawford should be a failure next season, then the Longhurst will be in demand, and

growers will wish they had included it in their planting."

FOUR EXPORT PEARS.

SIR,—What four varieties of pears would you recommend for export, to be planted near Toronto on high well drained clay loam?
Toronto.

R. BRACKON.

We would place Duchess first; it is large, of good quality and carries splendidly. Judging from one year's experience, we would be inclined to make Pitmaston second for export. Both these do best grown as dwarfs. Bosc is another excellent export variety, carries finely, and is excellent in quality. The fourth would be Anjou, for it succeeds well in Canada, and carries well. We do not recommend planting plums and pears together; it is better for harvesting the fruit and for general management of the orchard to have each fruit in a separate plot.

THE EXPORT TRADE IN APPLES IN 1902.

A PAMPHLET has just come to hand showing the exports of all kinds of produce from the port of Montreal during the past year. From the chapter on apples we take the following table, showing how our Canadian apples have been distributed among foreign markets during the past five years:

	1902.		1901.	1900.	1899.	1898.
	Bbls.	Cases.	Bbls.	Bbls.	Bbls.	Bbls.
Glasgow	188,270	33 793	73,093	128 378	128,399	147,624
Liverpool	169 813	7,697	49,058	95 953	99,127	177,334
London	74,630	762	284	12,497	5,126	50,708
Manchester	30,444	269	129	14 271	20,686	32,832
Bristol	6,331	1,125	53	3,231	4,613	17,911
Aberdeen	6,068	.....	1,046	8,601	.....	5 693
Belfast	1,642	3,367	24	4,154	114	1,609
Hamburg	1,829	2,120	26	32	8,661	1,714
Cardiff	2,370	.....	.....	.....	.....	.....
South Africa	250	1 828	.....	.....	.....	.....
Leith	458	183	2	158	1,179	.. ..
Antwerp	36	.....	.....	.....	.....	.....
Others	1,359	.....	22	374	355	1,251
Totals	483,490	54,144	123,737	267,791	267 359	476,256

For a great many years Liverpool, London and Glasgow were the only foreign points to which our apples were consigned, but of late one port after another has been calling for them until now we have before us the choice out of at least a dozen foreign markets competing for our shipments. This competition, together with the improved methods of growing and packing, which our association is rapidly bringing about among Ontario Fruit growers, means much for the future in apple growing in Ontario. Among the more recent markets calling out to us for increased shipments of apples, is Hamburg, a distributing centre for the great cities in the interior of Europe. As a rule green apples are not much in demand in Hamburg, because green cooking apples are produced in great quantity in Germany; but our fancy red stock is highly prized. Mr. Tweddle of Fruitland, however, says that his shipments of Greenings have created a great impression on account of their excellent quality, and he believes he will succeed in working up a demand for this variety.

Of the markets for our apples which have opened up during the season just passed is the great country of South Africa, to which a shipment has been made of 250 bls. and 1828 boxes, Burlington and Grimsby contributing. We shall await the results with great interest.

In the pamphlet referred to, credit is given to the Canadian Fruit Marks Act for the establishment of the Canadian XXX, or No. 1, brand as fairly uniform, a thing that has never been known before. This brand seems likely to gain the confidence of buyers in foreign markets, and to lead to f. o. b. sales, at shipping points in Ontario, a condition which will be of the utmost value to our fruit growers.

THE NIAGARA DISTRICT FRUIT GROWERS.

THIS body of practical fruit growers met at St. Catharines on Saturday, the 3rd of January, and in the election of officers

for the new year chose Mr. D. J. McKinnon, of Grimsby, president, and Mr. C. E. Fisher, of Queenston, secretary. The Fruit Marks Act was criticised, (1) as causing many growers to be afraid to pack their own apples, and (2) as leading many growers to mark their first-class apples No. 2, in order to be quite safe from the dreaded inspector; and (3) as being a violation of individual rights. Inspector McNeill was present and explained that the inspectors were the friends and not the enemies of the fruit grower, and that there was no inclination on their part to prosecute except in cases where there were evidences of intentional fraud. On the whole, a general feeling of approval of the Act prevailed, unless with regard to one or two minor clauses, which may be more carefully considered at a later date.

THE TRANSPORTATION OF FRUIT

WAS one important topic under discussion, and it resulted in the appointment of Mr. D. J. McKinnon, the president, and Mr. W. H. Bunting, president of the Ontario Fruit Growers' Association, as a delegation to Ottawa, in company with the representatives of other bodies, to urge upon the Government the appointment of a Railway Commission.

The discussion on this subject was ably introduced by Mr. W. L. Smith, Secretary of the Farmers' Association and Editor of the Weekly Sun, and from his address we take the following points:

"The importance of the question of transportation to the Niagara fruit-growers is indicated by the statement that the district is producing about \$2,000,000 worth of fruit annually, and that practically all of the fruit is carried to market by rail. Under present conditions the railways are able to say how much of the price received for the fruit produced shall go to the grower and how much shall be retained by the carrying company for taking it to market.

AN UNFAIR DIVISION

"Are the rates charged for carriage fair rates? Growers say, taking the season through, and lumping express and freight rates together, that the carrying companies receive for carrying fruit to Montreal one-third of the return which the goods sell for on arrival.

"In other words, the fruit-grower, who takes all the chances of the season, who produces crops on ground valued at town lot prices, who pays a wage bill equal to that of a fair-sized factory, receives \$2 as against \$1 received by the carrying company (which takes no chances) out of every \$3 worth of fruit produced. Surely that is not a fair division.

"Ten or twelve cars of fruit are picked up in the district daily; when carriage is by freight the average rate is about \$60 per car; the cars, as part of a mixed train, are taken to Montreal in 36 hours. Surely \$600 or \$700 is altogether too much to charge for hauling ten or twelve cars of fruit some 400 miles in a day and a half, particularly since these cars form part of a general freight train.

COMPARISON WITH RATES ON OTHER PRODUCTS.

"The rates charged on fruit are excessive as compared with rates on other forms of produce. A rate of 34 cents a barrel on flour was quoted last week from Listowel, Ont., to Bristol in England. At the same time the rate on apples was nearly 90 cents—almost three times as much as the flour rate. Apples receive no better care in transit than flour receives. Last fall Mr. McNeill saw stacks of apples in barrels, while awaiting shipment, standing in the open, exposed to a downpour of rain, at stations in Western Ontario. Is the lower rate on flour due to the fact that millers have a strong, aggressive organization, which can force concessions from railways, while fruit-growers have not?

"Fruit-growers are not only discriminated against as such, but they are discriminated against as Canadians. Mr. Boulter, the Prince Edward County canner, has been able to secure a rate on peaches from Michigan to his factory in Prince Edward so much lower than the rates from Ontario points, that he found it cheaper to buy peaches in Michigan and pay the duty in crossing the border than to buy in Essex, where no duty had to be paid, and at points a good deal nearer his factory than Michigan is. And still the peaches in both instances were carried over our own lines—lines which have been built largely out of bonuses paid by our own people."

PLANS FOR SPRING PLANTING.

DURING the months of February and March the fruit grower should carefully consider the number and the kinds of fruit trees and plants required to make his business give him the best returns. He will find the most up-to-date notes on desirable varieties in the report of the fruit stations of Ontario, which may be had for the asking from the Department of Agriculture, Toronto, and with these and his own experience no mistakes ought to be made. If a larger order of trees is wanted it will pay to visit the nearest nursery, select the stock of the age and size desired, and secure it at first hand, thus saving the expense of an agent coming about to seek the order, and again to collect the money. If a farmer can plan a year ahead on the varieties required in his orchard, it might pay him to buy young trees, perhaps one year old, and grow them on his own grounds until ready for them, and thus not only buy at a low price, but improve the root system of the trees by the more frequent transplanting, so that there would be no stunting of vigor in the final planting.

The following table, showing the number of trees needed to plant an acre of ground,

may be of service at the present time when so many are estimating how much stock they need for spring planting :

NAME OF FRUIT OR GRAPE.	DISTANCE APPROX.	NUMBER PER ACRE
Strawberries	3 ft. by 1 ft.	14,520
"	4 ft. — 1 ft.	10,890
Raspberries	4 ft. — 1 ft.	10,890
"	6 ft. — 2 ft.	3,630
Blackberries	6 ft. — 2 ft.	3,630
Gooseberries	5 ft. — 4 ft.	2,178
Currants	6 ft. — 4 ft.	1,185
Peaches	15 ft. — 15 ft.	193
Plums and Pears	20 ft. — 20 ft.	108
Apples	30 ft. — 30 ft.	48
"	36 ft. — 36 ft.	33
"	40 ft. — 40 ft.	27

A LEGAL APPLE BOX WANTED.

SIR, I am instructed by the directors of the British Columbia Fruit Growers Association to ask for the co-operation of your association in an endeavor to induce the Dominion Government to establish a legal box for the sale of apples. The box which we have found to be the most convenient has a capacity of 21 x 10 x 11 inches and we would prefer that capacity made legal, but we are more interested in having a lawful box than in the size of same. If your association will give this matter the consideration it deserves and join us in an appeal to the government to establish a uniform standard box, the question will be settled at the next sitting of parliament and a source of annoyance to dealers and consumers will be removed.

W. J. BRANDETH,
Sec'y, British Columbia Fruit Growers'
Association, New Westminster, B. C.

At the Walkerton meeting of our Ontario Association, last December, it was agreed to adopt an apple box measuring inside 9 inches deep, 12 inches wide and 18 inches long, for export. This is practically the California pear box, and we see no reason for making the apple box different, for many sizes are a nuisance when packing cars. We have been using a fifty pound box, 10 x 11 x 22, of which three filled a barrel, but in Great Britain we found this box was selling for the same as the Tasmania box, which is a forty pound box, and of which there are four to the barrel. We also find that a forty pound box is more wanted in the British market, and for these reasons we adopted the sizes above described.

We propose that all the Fruit Growers' Associations in the Dominion try this box for one year before we ask for any Act of Parliament. In Ontario we can get this box made dovetailed, of 3/8 stuff, for \$10.00 per hundred. It will hold three layers of apples, instead of four which we put into our bushel box last year.

DUCHESS PEARS IN GLASGOW.

MR. JOHN BROWN, Govt. Agent, Glasgow, writes: "Grimsby and Burlington shippers have yet to establish a name for uniformity. Some of their boxed fruit I have reported as poor, while other lots are more than excellent. I saw small Duchess pears, which had been held three weeks in Glasgow and were not colored in the least, being immature. Near them I found some of the finest Baldwin apples that have been on any market this season."

Prices for Canadian pears have gone up lately in the British market, in some cases to 8 and 10 shillings per half case. It is needless to say that this will give our Canadian growers a return much above anything they could expect in our own markets.

Mr. W. A. MacKinnon, Chief of the Fruit Division, makes the following comment upon these prices: "It would be folly to expect the same quality of pears to bring the same prices again, for many of the Duchess were simply wretched. Kieffers were fair for the variety, but not equal to last years in quality. They looked well, however, which the Duchess did not. You only need to compare the prices paid for Canadian pears with those for Californian on the same day, to see the relative quality of the Canadian. It certainly will not be safe to send such a quality of pear to this market when there is the usual supply of dessert pears."

THE FARMER'S WOOD LOT

THE value of a wood lot to a farmer is this year more apparent than ever before, in view of the very high price of fuel. So, during these cold winter days, when the thermometer is at zero, and coal cannot be had at any price, and wood is being sold at prices almost ruinous to the buyer, some of us are conscious of an unusual depth of gratitude to our fathers and grandfathers, who had wisdom enough to save for us a portion of the original forest as a wood lot; and we have a keen sense of comfort in drawing on our fuel supply from a source that is entirely out of the control of miners or operators.

At a recent meeting of the Experimental Union, at Guelph, Mr. R. D. Craig, a graduate of the O. A. C. and a specialist in Forestry, stated that a fair estimate of the average consumption of wood per family is from fifteen to twenty-five cords per annum. It is also estimated that a wood lot will give an annual crop of about three-quarters of a cord per acre. At that rate it would take from eleven to nineteen acres in wood land to keep the average family in fuel. If these conclusions are correct there is probably still a sufficient supply of timber to keep our people in fuel, provided the farmer's wood lot is properly cared for. But Mr. Craig believed there was ground for fear that, unless the present methods are changed, the wood supply of Ontario will be practically



FIG. 2532.

exhausted within ten years, and the whole province be dependent upon coal.

With such a warning as this sounding in our ears, surely those of us who have upon our farms a wood lot, small or large, will place greater value upon it, and give it as good attention as we do any other part of the farm. Cattle should not be allowed to roam about in it and browse the young growth, which, if allowed to grow untouched, would be a continual source of supply of trees to replace the older trees cut out for fuel. Anyone, who has walked through his wood lot in spring time, must have noticed the great number of little seedlings of maple and other trees which have started to grow, and which never come to any size where cattle are allowed to browse.

In reply to his enquiries of farmers as to

value of their wood lots, Mr. Craig said their estimates varied from twenty dollars to three hundred dollars, the average being fifty dollars per acre. This he considered a moderate estimate, for said he, with wood

worth four dollars a cord, about eighty dollars worth of fuel would be taken out a year, to say nothing of the value of fencing material, etc.

AN INCIDENT IN GRAPE GROWING

BY

ALEX. McNEIL, ESQ.,

ACTING CHIEF FRUIT DIVISION, OTTAWA.

THIRTY years ago a few small vineyards demonstrated what Essex County could do in grape growing, but it was not until the early '80's that the grape fever was epidemic. Hundreds of acres were planted, and the Essex Concord grape became the standard of excellence. Many of these earlier vineyards made money for the owners, and encouraged planting far beyond the needs of the market for table grapes, and the inevitable fall in prices came all too soon.

But the low prices of grapes stimulated another industry—winemaking. A year or two more and winemaking had reached the limit of the home market and was accumulating stock that might, in the ordinary course of events, have impressed the foreign markets, for the largest Essex winemakers did not follow the foolish practice of attempting to imitate foreign wines of all sorts, but made a pure, sound claret, with characteristics of its own, that placed it on a par with the best foreign wines of its class.

No doubt capital would have been forthcoming soon to place this upon the market, had it not been for the unfortunate frost of 1890, that root-killed not only the peach orchards of Essex, but 75 per cent of the vineyards as well. With grapes enough still for table purposes and no great demand from the winemen, there was little encouragement to

replant, yet prices were somewhat better and vineyardists, if not buoyant, were at least hopeful.

This, however, was the last gleam vouchsafed to the unfortunate grape-grower. In 1901 the black rot appeared in several of the older vineyards. This year, favored by the excessive humidity of the growing months, the rot made almost a complete sweep. Occasionally a grower might gather a few baskets in some favored spot, but complete and absolute failure was the rule. The writer, with twelve acres of good vines, the remnants of twenty-five acres, did not gather one basket of good fruit. A neighbor, with thirty acres, did not put a picker in his vineyard. The result is that grape growing will cease in Essex except for local markets. Of course the rot can be controlled by spraying with the Bordeaux mixture, but such additional expense would render competition hopeless with sections where the rot is not yet known, and where freight rates are not so high.

And thus will pass out of existence vineyards that once were measured by hundreds of acres, and with them may go some of the fond dreams of the planters. Yet the stern discipline of partial failure is sometimes necessary to develop the full measure of the strength of the individual as well as the greatest capacity of a country.



FIG. 2535. A BEAUTIFUL SITE FOR PARK OR PLEASURE GROUNDS.

OUR OLD FOREST TREES

THE engravings which accompany these remarks are taken from the Third Annual Report of the Canadian Forestry Association, a volume which is of great value to Ontario fruit growers and farmers, and may be had free of charge from Mr. E. Stewart, Dominion Superintendent of Forestry, Ottawa. The scene in Fig. 2535 is one that was taken in a Canadian forest some forty years ago, and shows the old style of lumbering, with the "caboose" in which the lumbermen slept and cooked their meals, and which was heated by a fireplace of earth in the centre. Interest in the picture is added in view of the fact that on the recent visit of the Prince of Wales to Ottawa, a shanty of this class was erected for his entertainment, to show the character of a lumber camp in Canada.

This illustration also serves to point out to our readers what unfortunate lack of forethought has hitherto characterized the lumberman's work in Ontario; what utter disregard of the future beauty of the landscape.

Here, for example, is a magnificent location for a home or a public park, which is being ruined because no one in authority thinks far enough ahead to take into consideration anything more important than present convenience.

The new settler who has taken up his farm in "New Ontario" is guilty of similar thoughtlessness, and begins to clear a place on which to build his house by destroying all forest trees about it. Grand old maples, elms and pines are recklessly cut and burned, which, if left in groups around the boundaries of the house yard or in single specimens here and there, at the side and rear, would in time come to be recognized as the chief ornaments of the homestead, and worth hundreds of dollars each.

The very abundance of these magnificent giants of the forest in Ontario lead to their wanton destruction, while on the vast naked plains of the great North-west, what would the settler not give to have these fine old trees with which to shade his home and give

beauty to its surroundings? The two other engravings we use because they serve to show in a most striking manner how important a clothing of trees is to the surroundings of a home. The first shows the home of Mr. S. A. Bedford, Supt. of the Experimental Farm at Indian Head, N. W. T., before any trees were planted, while the other shows the wonderful effect of a successful attempt to beautify the same with certain hardy varieties of trees and shrubs.

Granted that, as in this instance, a wonderful effect can be produced within a few years by recent plantings, yet, never in any man's lifetime, could these magnificent old trees be replaced, which now, in so many instances, are being cut down without the least hesitation in our province.

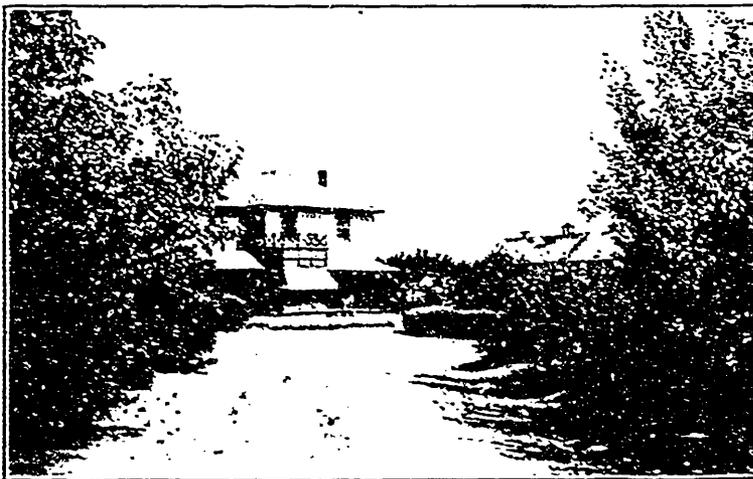


FIG. 2535. AFTER TREES WERE PLANTED.

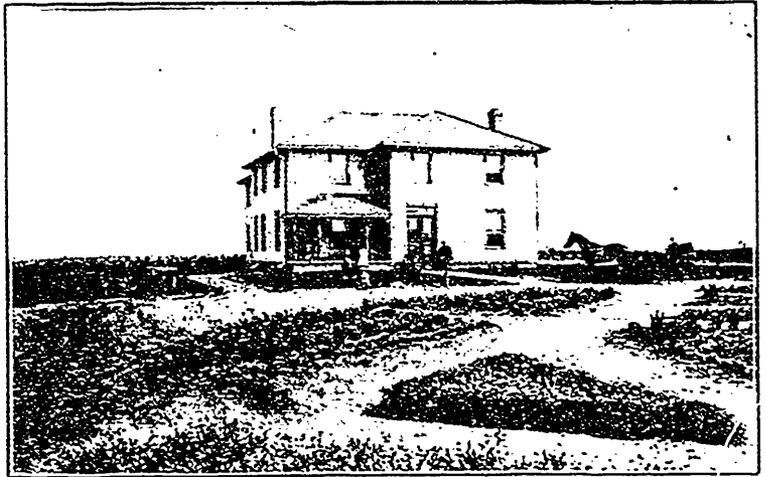


FIG. 2534. BEFORE TREES WERE PLANTED.

NEW FRUITS.

THE MAYNARD is a new plum of Luther Burbank's, which will be sent out next spring. It is claimed that this one surpasses, in quality and beauty of fruit, any plum Mr. Burbank has yet introduced. We notice that nothing is stated regarding its productiveness, and this has been the disappointing feature with that otherwise excellent variety, the Wickson.

THE BING CHERRY is not yet tested sufficiently for us to give any definite statement of it. It is a large, dark red or purplish cherry of the heart-type, which originated with Seth Lewelling, of Oregon.

THE CARMAN PEACH, which is of the North China type, is of Texas origin. It is of most delicious flavor and of large size, and is said to succeed well in the Northern peach section.

CANADIAN PEARS IN THE BRITISH MARKET

MR. W. H. COARD, Dept. of Agriculture, Ottawa, writes as follows: From the reports of the Government agents at Glasgow (Scotland) it would appear that our Canadian pears are at last receiving that appreciation which they deserve. The earlier shipment of Clapp's Favorites and Bartletts were not altogether successful; indeed, it can be taken for granted that Clapp's Favorite cannot be successfully shipped and should not be planted as an export pear. The Bartlett, under favorable conditions, does better, but cannot be depended upon, nor is the market likely to be so good at this season of the year; but our later shipment of Duchess, Sheldon, Anjous, and even Kieffer, have been quite successful. None of the varieties, however, are likely to equal either in profit to the grower or satisfaction to the buyer the Duchess. This pear combines in a rare degree excellent shipping qualities and good table characteristics, and the reports, especially from Glasgow, this year have been most encouraging.

Mr. John Brown, Dominion Government agent at Glasgow, has reported a dealer as stating that "after keeping the Duchess for fully ten days he found this pear to ripen nicely, adding, "I am well pleased with the way these pears have turned out, and am looking forward to getting some of the next shipments." Mr. Brown adds, "another party, who had fifty cases, kept them in an ordinary cellar for over a fortnight - from October 31st to November 15th and was delighted with the way the fruit came up. He expressed the opinion that they were very much better than the late varieties of French pears that he had been getting."

One large Glasgow dealer recently purchased over 300 cases of Duchess pears at

from 90 to 96 cents, and after keeping them for a couple of weeks sold every case at from 120 to 132 cents each. These pears were beginning to color splendidly. Another dealer in the same city, after keeping twenty cases for ten days, in a warm banana house, disposed of them at from \$1.32 to \$1.44 each, and the buyers were well satisfied with the bargain. In fact, the entire shipment was a complete success, and should stimulate emulation amongst pear growers on this side.

One noticeable feature was the appearance of the pears in the cases, those wrapped separately in paper showing up to much better advantage than those packed without wrapper in the case. Mr. MacKinnon desires to express the opinion that the less "Excelsior" there is used in packing pears the better, a little at top, bottom and sides of the case being quite sufficient. "I am certain," the gentleman adds, "that the next arrival of Canadian pears in the old country will realise better prices than the last, because buyers were dubious about the fruit turning out all right."

Exporters will do well to remember that the large Duchess pears would have done better had they been more matured. After being kept a short time the prices realised for them increased by from 36 to 48 cents per case of 20 pounds. This has reference to the large Duchess only, the small Duchess not ripening up nearly so satisfactorily.

Taken as a whole, this report is very satisfactory, and, looking at the large market in the United Kingdom for fruit all the year round, future consignments from Canada, if they maintain the quality of that under notice, will meet a ready sale, and will fetch higher prices than those quoted here.

A BRITISH HORTICULTURIST

SOME ACCOUNT OF HIS RECENT VISIT,
AS GIVEN IN THE GARDENER'S MAGAZINE.

IT WAS with much pleasure that we received a call during the autumn from Mr. Joseph Cheal, of Crawley, Sussex, England. Though his stay was brief, it was yet long enough for him to make a somewhat careful survey of our methods of fruit culture, and take some photographs as mementos of his visit. Being a member of the Royal Horticultural Society, he promised us an introduction to some of its most prominent members should we visit London, so that we might gather some interesting items for our readers.

In a paper, which he entitles "Rambles in the States and Canada," we find the following references to our country :

"As I wished to spend as much time as possible in Canada, I took the steamboat up the Hudson River, and travelled as far as Albany, and had a most lovely sail through picturesque and historical country. Passing on by rail from here to the Falls of Niagara, a day was spent there with some English friends whom I accidentally met, and the journey was continued in company with them by steamer across Lake Ontario to Toronto. Here I stayed amongst friends for a week.

"Several days were spent in visiting the principal fruit district of Ontario. This is a strip of land about a mile wide, extending for over twenty miles round the shores of the lake, backed up and sheltered by the high cliff behind. I was surprised to see the thousands of acres of flourishing orchards and vineyards of this district, peaches growing in the same way as our apples, and grapes trained on wires, and to find that these orchards are most carefully cultivated, and kept remarkably clear from

weeds and blights. A Government Inspector of Fruit accompanied me through these farms, and from him I gained much information, and I had the pleasure of meeting Mr. Orr, then president of the Fruit Growers' Association, and a keen and successful cultivator. Another enthusiastic grower and experimenter in the same district is Mr. L. Woolverton, M. A., who is the editor of the "Horticultural Journal" of Canada, and is also preparing what will evidently be a standard work on fruits.

"An extensive fruit nursery conducted by Mr. E. D. Smith was visited, and also a fruit collecting depot, where large quantities of fruit grown in the district are collected, graded, packed and forwarded to various markets. A large refrigerating chamber is provided for soft, perishable kinds.

"I then passed on to Ottawa, a beautiful and flourishing city. An introduction to Professor Robertson, the Commissioner for Agriculture, led to an interesting conversation about their experimental work, and I spent a most profitable day with Dr. Saunders, the able director of the experimental farms and gardens of the Dominion. This experimental work is most carefully carried out, and fully reported on, and the reports must be of great value to both old and new settlers.

"As I am much interested in the different systems of packing, storing and freightage of fruit, an introduction to one of the directors of the Canadian Pacific Railway, Sir Sanford Fleming, led to an interesting talk with him in travelling from Ottawa to Montreal. I gained from him much about the progress and prospects of the Dominion. He said that immigration had been larger this

season than any year previously, and that from the States they had had an influx of 24,000, and that their company had sold one million acres of land.

I had thought the long, cold winters almost an insuperable barrier to successful cultivation, but the Canadians assure me it is not so bad as we imagine, and that the snow on land and ice on the lakes and rivers opens up roads for hauling which are impassable in summer, and though the frosts are very severe, the wood of the trees is so well ripened that it escapes uninjured; and the

air is so dry that it is not unpleasant to human beings.

The return journey was made from Montreal by the Allan line, and the steam down the St. Lawrence, past Quebec, is a very pleasant one, and somewhat exciting in shooting the Lachine Rapids above Montreal. We could not take the northern route, as the straits were blocked with icebergs, and in passing out to the south of Newfoundland we saw the floe ice breaking up on the rocky coast."

BEN DAVIS STILL ON TRIAL.

POOOR old Ben! We fear his days are numbered as heading the list of most profitable commercial apples. He has had very enthusiastic defenders, but their defence has been largely based upon his good looks, and his critics are probing beneath the surface and say he lacks in intrinsic merit, and that he cannot stand the test of time. And now that his family has become so numerous, it is evident they are held as very common sort of folks.

In Green's Fruit Grower, for example, we find J. L. Burton asking:

"Shall we go on setting the Ben Davis apple as we have been doing here in the Western and Central States for many years past? The buyers are beginning to complain of too many of this old favorite moneymaker and we are in doubt of the proper thing to do about planting the trees."

And Mr. H. E. VanDeman replies:

"There is no doubt that the millions of bushels of Ben Davis apples grown in the Mississippi valley, and farther westward, have made a great impression upon the markets of this country and Europe. It is the greatest of all our apples for business purposes, but not so much can be said of it in point of real value by the consumers. They want something better to eat and are demanding it. They are willing to pay for it, too.

"When I was in the states of Oregon and Washington two years ago I found a rising sentiment against 'Old Ben,' not only among the people who ate them but on the part of the dealers. They would scarcely take a big lot of this variety unless there were some Jonathan, Newtown, Rome Beauty or other good kinds to go with them. The good ones had to help bad ones. The same state of things now exists in the Central states. There is a fair apple crop in Missouri, Kansas, Illinois and that whole region, and in the big markets, such as St. Louis, there is an over-supply of Ben Davis apples. They bring little more than half the price that Winesap, Jonathan, Huntsman and other varieties of good quality do.

"My belief is, that those who are setting orchards will do well to take warning from these practical pointers from the business world and plant less of Ben Davis—and the same is true of Gano, which latter is no better in quality—and plant more of the really good apples. There will be more money in them in time to come, although for late keeping and the rough-and-tumble of the market 'Old Ben' will long hold a prominent position."

And in Coleman's Rural World, Mr. P. M. Kiely, of St. Louis writes :

"The publication in your journal a few weeks ago on my letter on the Ben Davis apple has brought to the front a number of defenders of old Ben. Strangely enough the parties coming to the rescue of this declining apple are those having large Ben Davis orchards—many of them planted years ago when this variety had more claims to recognition than it has now, or ever will have again. It is natural for a man to set a high valuation on his property and of course such people frown at any statement that reflects on their judgment or orchards. An apple dealer in Kansas City who is loaded to the guards with Ben Davis makes a hard fight for it in a communication to several trade journals patronized by dealers. The gentleman declares he has letters from many states calling for Ben Davis but he neglected to add that it was useless for them to ask for any other variety and that they were looking for the low figures likely to arise where the Ben Davis were so plenty and all other varieties so exceedingly scarce.

"At the late meeting in this city of the National Apple Growers' Association I met a large number of men whose orchards unfortunately were composed largely of Ben Davis. Most of them admitted to me that

if they were planting again they would raise more varieties that could be acceptable in every market and worthy of the patronage of all—something that would command good prices regardless of how low Ben Davis figures were. Other growers thought I wanted them to root out all their Ben Davis orchards—an idea I never entertained. A number of these gentlemen submitted what they regarded a knock out argument in 'What will you give us instead—what will take its place?' Now there is no necessity for seeking or presenting any one variety but as I stated in my former article, several and not one variety should take its place. W. T. Flourney of Marionville, Mo., one of the most successful fruit growers in the state and who owned too many Ben Davis trees to condemn them, acknowledged that the article would doubtless change many existing ideas and was especially valuable to those contemplating setting out new orchards. In fact nearly all submitted there was enough already planted and it was time to call a halt on the Ben Davis, because if another tree is not planted in the next twenty years, the western markets will remain deluged with it during all that time, because hundreds—I might say thousands of orchards are composed mainly of young Ben Davis trees."

CHIEF MACKINNON ON THE BEN DAVIS APPLE IN GREAT BRITAIN.

MR. W. A. MACKINNON, Chief of the Fruit Division of the Dominion Department of Agriculture, writing from England with reference to the Ben Davis apple, states that the enormous surplus in the western and south-western States is more than likely to lead to the increased export of the Ben Davis, especially in view of the fact that a large area of newly planted trees will soon be contributing to the tide, which, according to Mr. Keely, is already backing up.

"I am no enemy of the Ben Davis," writes Mr. MacKinnon, "but their quality is beginning to be better, or 'worse', known here in England, and our own growers must be on the alert and stop planting, or begin to graft as soon as the situation demands it. If our neighbors to the south are trapped that is the time for us to shoot ahead with large consignments of high class apples in sound condition."

TILLAGE FOR THE ORCHARD

II.—PREPARING ORCHARD LAND TO RETAIN
PRECIPITATION OF THE FALL AND WINTER.

BY

PROF. J. B. REYNOLDS,

OF O. A. C., GUELPH, ONT.

THE first preparation of orchard land for the retention of moisture should be done before the orchard is planted. Good underdrainage is the prime essential. Without this, subsequent efforts at good tillage will be more expensive and less effective. Good underdrainage prevents destructive surface washing, and increases the water content of the subsoil. If there is good natural underdrainage, artificial drainage is not necessary; but it must be seen to, before the trees are planted, that good drainage is provided.

A second step in the preparation of the land previous to planting, is deep cultivation. By this, I do not mean deep plowing, necessarily, although I see no objection to deep plowing for the purpose. At any rate, the loosening of the soil to as great a depth as possible—however it is to be accomplished—is the operation required. This operation, in common with drainage, produces permanently good results. It allows more water to enter and be retained by the soil. But especially, it enables and encourages the tree roots to strike deep into the soil, into a region where they are safer from the extreme frosts of winter or the extreme droughts of summer. The roots that run along just beneath the surface of the soil draw their moisture more largely from the chance showers of summer; while those that penetrate more deeply draw steadily supplies from below, and are not dependent upon the occasional and uncertain supplies from above.

With regard to subsequent operations,

there are three methods in vogue for treating orchards, which will be discussed in turn in their relation to the question under consideration, namely, retention of moisture. The three methods are: sod, clean cultivation and cover crops.

SOD IN ORCHARDS.—This article is not to be taken as, on the whole, commending sods in orchards. Here, the object is to point out the effect of sod in retaining moisture in the fall and winter. The covering formed by surface roots and the dead grass helps to prevent surface washing. Also, the grass roots penetrating the subsoil help to keep the ground pervious, and therefore increase the amount of water taken into the soil. In the third place, grass encourages the presence of earth worms, which burrow into the ground, and have a very beneficial effect in keeping clay orchards porous and mellow. Thus, directly and indirectly, grass has a good effect in helping the soil to retain moisture.

If, however, the grass is eaten bare and the ground trodden hard by animals pasturing in the orchard, these beneficial effects will not follow.

CLEAN CULTIVATION.—By this method no crops of any kind but trees are allowed to grow in the orchard. Weeds and grass are kept down by continuous cultivation during the spring and summer. For fall preparation, the proper treatment of the bare orchard is to turn the ground up loose and ridgy, to catch and hold the precipitation, and to prevent surface washing.

This method of continuing clean cultiva-

tion throughout the year is open to many objections. The bare ground offers to the tree-roots little protection from the severe winter frosts. There is danger, with the less hardy varieties of fruit trees, of winter-killing. With bare cultivation, the soil is very likely to become depleted of humus, a most necessary constituent for conserving moisture and good tilth. Also, with this method of cultivation the land is subject to surface washing and leaching of plant food by the heavy rains of fall, winter and early spring. On the whole, therefore, continuous clean cultivation is not to be recommended, either as a general expedient or as an aid to storing up moisture in the soil during the inactive season.

COVER CROPS.—By 'cover crop' is meant a crop sown late in the summer, allowed to stand as a cover for the ground during the winter, and plowed down early next spring. The cover crop protects the roots of trees in winter. It prevents washing, and during

rains and thaws holds the water at the ground surface long enough for the water to soak into the ground. The roots of the cover crop penetrate the subsoil to a greater or a less depth, according to the variety of crop, and generally have a beneficial effect on the conditions of the subsoil. The growing crop "fixes" the soluble plant-food in the soil, and instead of allowing this food to leach away, the cover crop absorbs it in the fall and returns it to the soil the next summer, after being plowed under for green manure. Lastly, the annual addition of green manure to the soil enriches the soil greatly and improves its tilth and water-holding power by the conversion of green manure to humus. It may be seen, therefore, that the cover crop is favorable for general purposes as well as for the special purpose which forms the subject of this paper.

The next paper of this series will deal with cultivation during spring and summer.

ONTARIO FRUIT IN WINNIPEG

CULLS GOING FORWARD—A BAD IMPRESSION GIVEN.

I NOTICED in last week's "Grocer" what Mr. A. McNeil, our chief in the fruit inspection division, has to say to the Ontario fruit grower. Situated as I am here, I have an opportunity to see something of both sides, and really, Mr. Editor, it is awful. If I am prejudiced at all, it is in favor of Ontario. Ontario is my old home. I have been up and down its roads and lanes, in and out its ways and by-ways; I have plucked its fruits and gathered its its flowers, and really, it gives me pain when I see some of the packages that come up here marked "*Choice Ontario Apples.*"

It is no use mincing matters. If you have space to spare, please give the follow-

ing samples of what is not at all uncommon in my experiences the past season:

One firm that claims to be the largest growers of a certain variety of apples and pride themselves on their reputation, sent a carload of apples here. Now mark—their own growing and packing. Out of one of their barrels I took some samples and sent to the Department at Ottawa, which issued the following statement regarding them: "20 of these apples weigh only 28 oz." The report then went on to speak of the shamefulness of such practices. Another very large firm sent a car of apples here, two barrels of which I picked over, and this is the result: 1st barrel, 74 good, 54

culls; 2nd barrel, 76 good, 53 culls; 15th of inferior is the limit, even if graded No. 2. They were prosecuted and fined, two other cases being found against them in another city.

One very large shipper, grower and an altogether prominent man in horticultural circles, has been sending considerable quantities of apples and other fruit to this country last season. I happened to catch a car of his apples at Brandon, but had only an hour in which to hunt up the car, make the inspection, and catch my train. Fortunately the car was at the platform and I got out six barrels. Two of them were Jenettings, and not worth forty cents a barrel. I have seen peaches out of the baskets stamped with this man's name, and they were not worth a shilling a bushel. They were about the size of walnuts, and every bit as rough.

But the funniest and yet perhaps the most pathetic thing about the whole business from a moral point of view is this. A. R. C. being (as I am told), a contributor in the making up of a carload, the apples he himself furnishes being liable for two different reasons to subject him to prosecution, while many others of the lot from other sources are so bad that some of them would not bring the price of freight charges—this A.

R. C. writes the unfortunate receiver of the apples to pay up or be sued.

Mr. Editor, these are not Arabian Night or fairy stories, but downright sober, solemn truths; truths that I might vouch for in every particular, and are but a fine cut of many. It is no use to use bad language, indeed one must not for cold type, but seriously, what are the Ontario people going to do about it? Supposing British Columbia had no apples to send to us, is there not a higher motive and a better reason why this should not be continued? Scaring a man into packing his apples right is something like scaring a man into religion because he is afraid of Hades, and will only last while you keep him scared, and I have it on good authority that a large proportion of that class backslide.

I trust the motive which inspires this letter will not be misunderstood. I beg to assure your readers that it is purely a case of "Nothing extenuate nor ought set down in malice." As I have written to another periodical in another letter I know something of the difficulties that had to be met this year.

Hoping I have not trespassed on too much of your space, I remain, yours truly,

J. J. PHILP,

Dominion Fruit Inspector.

ORIGIN OF FAMOUS APPLES.

AT THE recent Shaw banquet in St. Louis, Albert Blair, responding to a toast said:

I am glad that the first Congress of American Apple Growers has been held in this city, in the state of Missouri. We owe much to other states for their achievements in apple culture. Massachusetts gave us the Baldwin, the apple so much prized by our friends in the east; New York gave us

the Northern Spy and the Newton Pippin, the latter said to be the king of apples; New Jersey gave us the Belleflower and the Maiden Blush; Virginia, the Albermarle Pippin and Grimes' Golden; Kentucky, the Ben Davis, unequalled for profit; Missouri has produced the Missouri Pippin and the Huntsmen's Favorite, and is herself first in rank as the land of the big red apples and of the big yielding orchards that produce them.

WORK ON FRUITS AT THE SCHOOL OF HORTICULTURE.

THE students at the School of Horticulture, Wolfville, have been taking up a study of varieties of pears adapted to Nova Scotia. The class was divided into committees, and to these committees were referred all of our principal varieties of pears with instructions to secure all possible information regarding them from those who have grown them here and from books and periodicals. The points investigated covered such questions as the habit of growth of tree; whether it grows best as a dwarf or a standard; age of coming into bearing; is it an abundant bearer or not; is it a profitable pear to grow for market; what are its failings? Local authorities such as Mr. R. W. Starr, Mr. A. H. Johnson and others were consulted and their testimony was given first place as showing the value of the

different varieties. Then Downing, Warden, Thomas and other writers were consulted and lastly the bound volumes of the *Canadian Horticulturist*, *Country Gentleman* and other periodicals in the school library were searched for information on the various sorts. At the appointed meeting of the class the committees reported on the different varieties, and each student took notes for future reference. The same plan is now being followed with our principal apples. Specimens of all of them have been examined in class, and each student has described them and tested them for himself. Now they are referred to the committees, who will report later the judgment of our growers on the strong points and the failings of all our standard apples, together with any new and promising candidates for public favor.

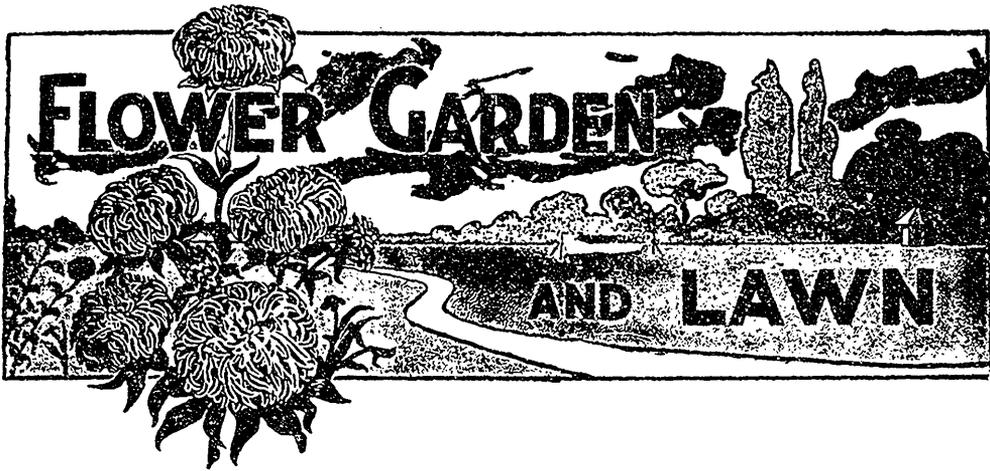
W. H. DEMPSEY, Trenton, writes:—The Niagara grape has been fruiting here for some years, and is considered a success in this district. It ripens well, and takes well in the market; in fact it is about the only white grape grown. The vine will winter on the trellis about nine years out of ten here. It is inclined to set too much fruit to ripen well some years.

ELLWANGER & BARRY, Rochester, N. Y., are introducing the Gans pear, of Ohio origin. It is declared to be a valuable addition to the list of early pears, in season between the Tyson and Bartlett.

PRUNING KIEFFER PEAR TREES.—One of Delaware's prominent fruit growers, J. J. Rosa, says that he cut his six-year-old Kieffer pear trees too much. As an experiment,

he left one tree to compare with those he had pruned. Last season from the unpruned tree he got eleven baskets of choice fruit, while none of the others bore more than four or five baskets. He believes he lost at least 3,000 baskets of pears by too severe pruning in this orchard, and does not advise severe cutting of young Kieffers.

THE MACDONALD APPLE.—A sample of this new apple was received on the 24th of January, 1903, from Luke Bros. Co., Montreal. In appearance the sample strongly resembled a very fine sample of Ben Davis, but the quality is much superior. If the tree is healthy and productive, we would expect this apple to prove one of the best commercial apples for Quebec, that is judging from this one sample. It is said to be a native of the Province of Quebec.



HYDRANGEA PANICULATA GRANDIFLORA

AMONG the plants to be sent out among the readers of this journal, next spring by the Secretary, Mr. G. Creelman, is this hardy hydrangea, which deserves a place on every lawn in Ontario. It has now been fully tested, and has proved hardy in the fruit districts of our province. At Maplehurst we have had a bush in flowering for several seasons, and Mr. Jas. Goldie, of Guelph, states that it has stood a winter temperature there of 40 degrees below zero, and has come out perfectly unharmed. This is very remarkable because the other varieties of *Hydrangea*, such as *Thos. Hogg*, *Otaksa*, *Hortensia*, etc., though most beautiful in flower are too tender for outdoor planting in Canada; even the wild *Hydrangea*, (*H. arboréscens*) is only found in Pennsylvania and southward.

Our engraving shows one of its immense panicles of bloom, which is made up of hundreds of florets, which continue to grow and develop for six weeks or more, changing gradually from ivory white to pinkish white. The late flowers dry up, and take on a rich brown color, when they are desirable for winter bouquets.

The *Hydrangea* is very susceptible to the influence of drouth, and in dry seasons, especially if in light sandy soil, it should be well mulched, and occasionally thoroughly drenched with water. The great point in its culture is to keep up a good vigorous growth, which will usually be succeeded by great masses of bloom in the autumn. In dry seasons our hydrangeas suffer most

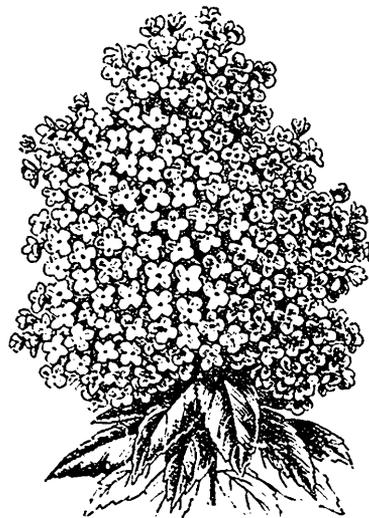


FIG. 2536. *HYDRANGEA PANICULATA GRANDIFLORA*.

severely from lack of such treatment as we have described, the leaves drooping badly, and the flower clusters failing to reach their full development.

For a conspicuous place upon the lawn, either as a single specimen, or in a group, it is one of the most desirable of all shrubs. Its time of flowering is in August or September when there are very few other shrubs in bloom, and then there is nothing that can in any way compare with it.

Mr. A. H. Ewing, of Woodstock, Secretary of the Canadian Horticultural Association, speaking of *Hydrangea paniculata grandiflora* says: "No shrub pays better for good treatment and good feeding than this. Young plants should be planted in the spring, in good rich soil that has had lots of well decayed manure dug in, and they should be kept well watered during dry weather; when in full growth they may have liberal doses of liquid manure. With this treatment they are sure to have large panicles of

flower towards the end of the summer. They should be well cut back every year, before the buds begin to swell, leaving only two or three strong eyes to each shoot, except, perhaps, in order to shape the plant, when more may be left, but the less eyes left the stronger will be the growth. It is a most beautiful shrub, and will well repay all the attention bestowed on it. The flowers last a long time—well into October; it should be in every garden. Here is a description of a round bed of them at Elizabeth, N. J., taken from the *American Florist*:—

"The bed was 25 feet in diameter, and contained thirty plants, the centre plants reaching to a height of eight feet. The plants will be seven years old next spring. They were in bloom August 1st, and made a handsome show for two months. When at their best there were two or three thousand panicles of bloom, the largest measuring fourteen inches in length and ten inches in diameter at the base."

PLANT FOOD

To induce free blooming and also to economize in space, small pots are more desirable than large ones. When the roots become somewhat pot-bound, the plant grows more slowly, and turns its attention to blooming; but very likely it has exhausted nearly all the available plant food contained in the soil, in making its growth, so if we expect it to give us a generous supply of blossom we must supply needed food at regular intervals. There are a number of "Plant Foods" on the market, and provided one lives near a seed house, perhaps the best way is to buy the prepared food, and use it as directed on the package. The following mixture can be put up at any drug-store, and used as advised will give satisfaction:

Three-quarter pounds Sodium Nitrate,
one-quarter pound Sodium Phosphate (dry),
one-half pound Potassium Sulphate.

Pulverize the materials and mix them thoroughly (dry). Dissolve one rounding tablespoonful in one gallon of hot water. Let it cool before using; pour the liquid on the soil. One-half teacupful is sufficient for a six-inch pot. Use once in two weeks.

A good plan is to water plants by standing the pots in water hot enough to steam, leaving them in until the top of the soil shows moisture. The warm water at the roots, and steam on the leaves and branches have a very beneficial effect.

FEBRUARY NOTES

FEBRUARY NOTES—NOVELTIES—CARNATIONS—FUCHSIAS—CELLAR PLANTS—EARLY SEED SOWING—GIVING AIR—PROTECTING WINDOW PLANTS.

BY

WM. HUNT,

SUPT. GREENHOUSES, O. A. C., GUELPH.

FEBRUARY may be fairly termed "catalogue" month, as these useful advance heralds of busy spring time usually make their appearance during this month.

In making your selection of seeds and plants do not discard well tested varieties that have proved useful and suitable, for novelties that often turn out to be miserable frauds or failures. Place the "novelties" down on your list of seeds or plants as "extras," your disappointments will then be felt less keenly, and your successes be an additional pleasure if some new or novel plant or flower of real merit is added to your collection.

Order your seeds and plants early, and avoid the early spring rush, and consequent delay.

WINDOW PLANTS.

CARNATIONS.—Although these are not considered to be really good window plants, yet one sometimes sees a nice specimen plant in a window where the temperature of the room is not too high, and the atmosphere consequently not as dry as where a high temperature prevails. Carnations like a moist atmosphere and a moderate temperature. A temperature of 45° at night and 60° in the day time suits them admirably. Red Spider is the bane of the Carnation amongst insect pests, and is generally the cause of failure with these sweet-scented favorites. Syringing the foliage, or dipping the growth of the plant in a pail of water on

fine sunny days is the best preventive or remedy for these almost imperceptible but destructive enemies to successful carnation culture, both in the window and greenhouse.

When the growth of carnations begin to assume an unnatural, whitish appearance, you may be pretty well assured that these pests have started out on their work of



FIG. 2557. CARNATION.

destruction. Commence at once with the syringing and dipping process at least two or three times a week. Carnation plants like to be kept moist at the roots, but do not like to be soddened with water all the time. Too much water at the roots often injures them and produces an unhealthy appearance of the growth. By examining the underneath side of the leaves closely, it can soon be ascertained if the spider has commenced its work, or if the plant has been getting too much water at the roots, making it look sickly.

To propagate Carnations, pull off a few of the young shoots that are produced about half way up the flower stem and stick them in around the pot the plant is growing in. They will often root more readily here than in sand. Remember to pull the short growth off, and not use the knife to it at all. The shoots mentioned for propagating are usually called "pipings," to distinguish them from ordinary cuttings. In three or four weeks they will have taken root and be ready to pot off into small pots.

FUCHSIAS.—Plants of these that have been resting during winter should soon be started into growth. Prune the tips of the young wood of last year's growth back a little, so as to make a nice, shapely plant. Give the plants more water than they have had whilst resting, and place them in a warmer position. As soon as the small leaves begin to appear, shake the plants out fairly well from the soil they are in, removing, as a rule, about half of the soil. Repot into the same sized pot into soil composed of two parts of rich, light loam and one part each of sand and leaf soil, well mixed together. Give the plants plenty of drainage at the bottom of the pots; broken pots are best for this purpose. Water the plants well once at the roots, then withhold water until the soil begins to show signs of dryness. Syringe the top growth of the plants daily. This will help the plants to break

into growth strongly, and also keep down red spider, the latter being the worst insect pest the fuchsia has, as is often seen by the plant dropping its leaves, sometimes before it commences to produce its beautiful drooping clusters of flowers. Syringe fuchsias often and thoroughly, wetting every leaf, especially the underneath side.

CELLAR PLANTS.—Oleanders, Hydrangeas, Lemon-scented Verbenas, etc., that are often wintered successfully in basements and cellars, should be looked over occasionally to see if they are in good condition. Possibly some may require a little water, as the soil around these dormant plants must not be allowed to become dust dry. If the plants are already showing signs of growth from having been kept in a too moist or warm place, it is best to bring them at once into partial light and repot them if necessary. Plants that have once started into growth and are then put back into a dark place and allowed to dry again at the roots, are injured materially, if not killed, by the latter treatment. Better to introduce them gradually into full light and sunshine in the window and grow them on, than attempt to check them again after they have once started into growth. This second return to a dormant state generally proves fatal to almost all plant growth.

EARLY SEED SOWING.—Seeds of Petunias, Verbenas, Alyssum and Lobelia may be sown in pots in the window about the end of the month or early in March, so as to secure large plants for window boxes or hanging baskets. Later sowings may be made for planting in the beds or borders. Golden Feather (*Pyrethrum*), so useful as an edging plant, should be sown early, as it is very slow growing.

GIVING AIR TO PLANTS.—With the increasing heat of the sun, window plants will be benefitted by being given a little fresh air. This must, however be very carefully done, so that the outside air does not strike

directly on the plants, unless the weather is more balmy and spring like than is usual in February or early March. By opening an outside window or door in an adjoining hall or room on a fine and moderately warm, sunny day for only a few minutes perhaps, enough pure air will be admitted to be of great benefit to the plants. This can be done every day if the weather permits. Or the top sash of the window may perhaps be lowered an inch or two, to allow a current of fresh air to pass over the plants without striking directly on them. Never give air from the bottom of the window, even on sunny days, unless the temperature outside in the shade is about 50'. Even then a strong breeze directly on the plants may injure the most tender ones unless great care is exercised.

INSECT PESTS.—These will be sure to increase rapidly as the heat of the sun increases. Tobacco smoke or tobacco water, and constant syringing and sprinkling the plants with cold water once or twice a week on fine sunny days, are the best preventatives and remedies for insect pests, more especially the aphis or green fly, the most common spring and summer pest to plant life.

PROTECTING WINDOW PLANTS.—Lifting the plants down into a warm corner of the room, away from the direct current of air from under the door, will often save a collection of plants from freezing on extra cold nights. A sheet or two of newspaper will also give extra protection if placed around and over them. Newspapers or sheets of brown paper placed between the window and the plant so that the edges of the papers overlap each other as well as the edge of the window, is a great security to window plants, in addition to a thick, close window blind. Late winter and early spring is when window plants are in the greatest danger from frost, as the warmer days induces carelessness in regard to fires, the result often being the ruin of a fine collection of plants

after a winter's previous close care and attention.

Black Spot on Roses.

SIR,—I am greatly troubled with black spot on my roses, H. P's. It appears soon after the bloom is over and defoliates the canes entirely before the summer is past, thus injuring the new growth. What remedy do you advise? A. B. O.

Bad drainage at the roots, or too much animal manure applied to the soil, or too much water will induce the disease known as "black spot" or "rose leaf spot." If the soil is of a clayey nature, try a good dressing of wood ashes in the spring. Spread the ashes over the soil so as to pretty well cover it, then fork the ashes just under the surface of the soil. Fungicides that will check the black spot are often as dangerous to the plant as the disease itself. The disease seldom does much injury where the soil is well drained and proper fertilizers used. About one-third bone meal may be added to the ashes mentioned if a fertilizer is needed. Picking off the diseased leaves as soon as they appear is also a preventive of the disease spreading.

Carnations.

SIR.—Would Mr. Hunt be so kind as to tell me why so many seedling carnations of the Marguerite, Dwarf Vienna and other varieties fail to produce flowers? They grow large tufts of leaves but no flowers. It is so common with me that he must have observed it. The habit of growth of these flowerless plants is quite different from those which bloom. A. B. O.

I should advise trying a fresh strain of seed of the Marguerite Carnation. These carnations are very susceptible to hybridization, and it often happens that many of the plants partake more of the remountant or perpetual flowering kinds, the latter taking a much longer time than the Marguerites to produce their flowers from seedling plants.

Geraniums.

SIR,—Can the soil be too rich for geraniums? My beds are made very rich. Whatever the cause the result has been that the plants produce no flowers, and the leaves drop off and all are more

or less affected with a round spot as if stung by the blister beetle.

A. B. O.

An excessively rich soil is not good for geraniums as it induces a soft sappy growth and few flowers. Take out a portion of the top soil of the bed, and substitute some

light loamy soil that has not been enriched, mix the two soils well together when forking the bed over. Planting the same varieties year after year will sometimes account for plants not flowering. If this is the case, plant some other varieties.

LARGE FLOWERED MOCK ORANGE

A WELL-KNOWN shrub that is almost indispensable in any collection, is the Mock Orange or Sweet Syringa. In 1899 we showed our readers a spray from a bush at Maplehurst, which we reproduce. The large flowered variety is so superior to the common one grown in Canadian gardens, that when this plant first came into bloom it seemed almost a new species, it is so much larger and more showy. Dr. Saunders wrote of this variety in one of his reports as follows: "There are several species belonging to this genus which are beautiful and interesting when in bloom. Grandiflora is one of the best of them. The flowers are large, pure white and sweet scented, and are produced in great abundance during the month of June. The bush is a vigorous grower, and if not interfered with will, under favorable conditions, reach the height of eight or ten feet. Since the flowers are produced only on the wood of the previous year, this may be cut away when the flowering period is over, which will give more room to the new shoots and they will become better ripened. In this way these shrubs may be kept smaller and made to produce flowers in greater profusion. The syringas will, however, do very well without any pruning beyond the occasional removal of dead wood and flower freely. The large flowered species is fairly hardy and usually comes through the winter without much injury, especially when partially protected by hardy trees and shrubs, but in seasons of

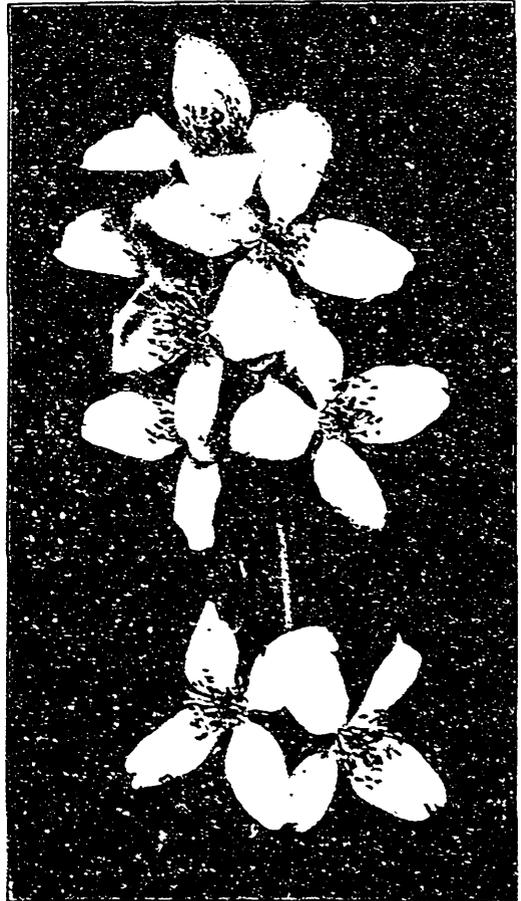


FIG. 2538. SYRINGA.

unusual severity the shoots are often partly winter killed.

SPIREA VAN HOUTTEI

OUR engraving shows a bush of *Spirea van Houttei* in full bloom at Maplehurst early in the month of June. Of the large and attractive group of *Spireas*, some species of which are found natives of nearly every country and climate, no one is more beautiful than this, for it is a wonderfully free bloomer, and its charming white flowers make it a splendid bush to plant along with other shrubs, such as *Weigelia*, *Syringa*, *Tartarian Honeysuckle* or *Purple Fringe*. It is

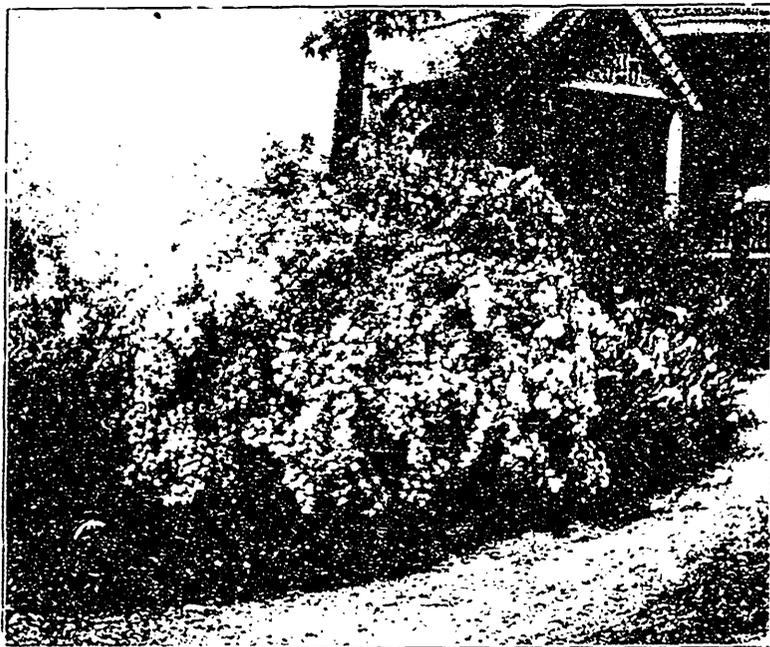


FIG. 2530. SPIREA VAN HOUTTEI.

quite hardy in Southwestern Ontario, and does fairly well even as far north as Ottawa.

The bush grows to a height of about six feet. It is one of our premium plants this spring.

HOUSE PLANTS IN WINTER

PALMS ARE AMONG THE MOST BEAUTIFUL AND SATISFACTORY.

THERE are many beautiful plants that with intelligent care can be made to thrive and do well in winter.

Among the most beautiful and satisfactory are palms. They are very strong and hardy, and with the observation of a few simple rules can be kept green and vigorous all winter. More palms are killed by overheating than by cold. They should have a temperature of between 50 and 60 degrees.

If it is not convenient to have any room in the house kept as cool as this, stand them in the corner furthest from the radiator, as close as possible to the light, but not in the glaring sun. The worst enemy of plants is dust. Owing to its smooth leaves, the palm can be readily kept free from this. Its leaves should be washed with a soft sponge and luke warm water.

As to watering, the great danger is that

the housewife will be too generous in this respect. It is difficult to give a definite rule. Generally speaking, the earth in the pot should be kept moist, not wet. If the room is kept at high temperature, the plant will require more water than in a cool place. But winter should be a time of rest for the plant, and therefore nourishment and water should be given sparingly.

Neither a palm, nor any other plant, should ever be put in a glazed pot. If an ornamental pot is desired the earthen pot should be set inside. A porous pot absorbs and evaporates the moisture, while in a glazed pot the earth grows sour and unfit for even very hardy plants. There should be a hole in the bottom of the pot, over which a stone, a bit of broken crockery, or something similar should be laid. A few lumps of common charcoal at the bottom of the pot will prevent the roots from rotting, and powdered charcoal mixed with the earth has the same effect. The chunks localize the effect, keeping the bottom from turning sour.

Having temperature and moisture right, the next enemy of the plant is parasites, such as fungi and insects. Many little insect pests affect the palm. Some of these are destroyed by washing the leaves with a sponge or a soft brush, using clean water only. Those that cannot be destroyed in this way, such as scales, can be quickly despatched by tobacco juice diluted with water. Any tobacco or cigar manufacturer will give you all the ribs of tobacco leaves you want. Put a handful of these in a quart of water and boil. Wash the leaves with this, and if you put in a little whale oil soap it will be all the more effective.

As to fertilizers, none should be used in winter, as it stimulates the plant into an unhealthy activity at a period when it should be resting. If the palm begins to droop and the normal bright green turns into a sickly yellow it is probably because it has been

kept too wet, or if the plant has been in the pot two or three years the soil in which it grew has probably been exhausted. In this case repotting is the only effective remedy. Care should be taken, however, not to transfer to too large a pot. Most people think that the larger the pot the better for the plant. But this is a great mistake. If the pot is too large the plant has more moisture and nourishment than it can absorb, and the roots will rot. A pot an inch and a half larger in diameter than the old one will afford ample room. The second year a portion of the earth in the top of the pot, where it is free from roots, can be removed and fresh put in, but the plant should not go more than two years without repotting.

These rules for palms apply equally to all winter plants. You must adapt your plants to the condition of your rooms. Tell the florist what kind of heat and exposure you have, and he can tell what kind of plants will probably do best in your rooms. Some of the hardiest and most satisfactory varieties of palms are the Kentia, Latania, Areca, Cocus, Corypha, Chamaerops, Dracaena, and Pandanus.

The cactus has been sadly neglected as a house plant. There is no plant that responds more gratefully to a little kindness and intelligent care. Its odd shape will fully compensate for the little trouble the plant causes. Frost and too much moisture are fatal to the cactus family.

The greenhouse favorites, violets, roses and carnations, cannot be grown at home. While the rose will sometimes develop the buds upon it when purchased, it can rarely be induced to blossom again. The azalea, too, which when purchased, is loaded so thickly with blossoms, if kept a year with all care at home, will perhaps put out two or three straggling flowers. But there are plenty of fine house plants that are too little known.—*The Mail and Empire.*

THE CANTERBURY BELL

(*CAMPANULA MEDIUM*.)

BY

JAS. M. HALL,

HAMILTON.

THE genus *Campanula* is a very important one, and contains some three hundred species, some of which are annual, some biennial and some perennial.

The Canterbury Bell (*C. medium*) is a great favorite with me, and I have pleasure in sending you photograph of a bush in my garden, and also of a few of the single flowers. These show how appropriate the name *Campanula* is, for it is a Latin word for "little bell." I think no garden is complete without this species. It is a hardy biennial, and since it does not bloom until the second year after planting, it is necessary to sow seeds every year in order to keep up an annual display of flowers. This plant grows up the second year in pyramidal form, and

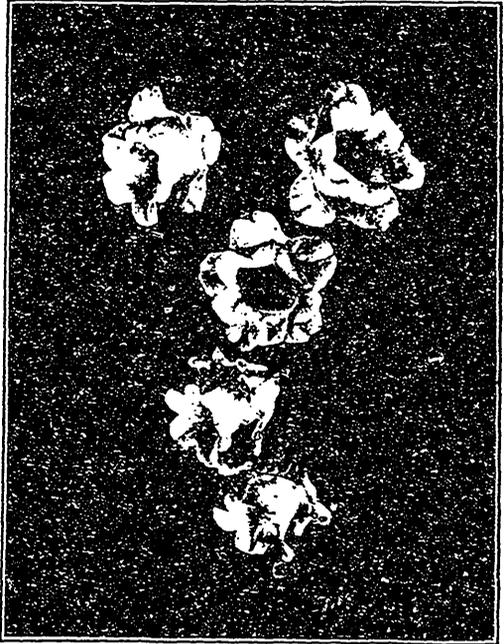


FIG. 2541. CANTERBURY BELLS.



FIG. 2540. *CAMPANULA MEDIUM* (*C. BELLS*).
GROWN BY MR. HALL, SUMMER OF 1902.

has many large bell-shaped flowers in beautiful shades of dark purple, mauve, blue, pink and white; they are also striped as blue and white, mauve and white, etc.

A lovely variety of this *Campanula* is the one known as "Cup and Saucer," the white waxy appearance of which is beyond description.

The *Campanulas* succeed best in a very rich, well drained soil, and they should not be too much exposed to the sun. The plants should be protected in winter with leaves and coarse litter or straw.

They are fine for cut flowers, and the cutting encourages their continuous bloom; indeed if the seed vessels are removed a second crop of flowers may be had the same season.

THE CARE OF PLANTS IN THE WINDOW

IN winter, as at no other time, we appreciate the flowers in the window. They seem to suddenly take on a charm and beauty we have not seen in them before, and we feel that home would not be what it ought to be without them. And this is as it ought to be. Flowers should be considered one of the necessary things of life.

A window full of flowers in winter is as good as a course of lectures to him who keeps his eyes and heart open. They are all the time preaching little, silent, eloquent, sermon to us. They concentrate our attention on a bit of summer brightness, and we feel that if a fragment of the great whole can afford so much pleasure, we have but feebly appreciated the wealth of beauty and brightness God gives to us yearly.

Make friends with your plants. Don't be content with simply knowing their names and just as little about their requirements as will enable you to keep them alive. Be on intimate terms with them. That is the only way to enjoy them.

In order to grow plants well in the house they must have plenty of light. Unless this can be given they will be spindling and weak, and there will be few if any flowers, and these will be inferior.

The best exposure is a southern one; the next best an eastern one. A south window is the one in which to grow Geraniums, Lantanas, Heliotropes, and all plants fond of much sunshine, while the eastern one is better for Begonias, Fuchsias, and such plants as care more for the sun in the early part of the day, that they do after its rays become more intense. A west window gives too much heat unless shaded considerably, but is better than no window at all, and if you have no other to give your plants, don't

go without them. A curtain of thin muslin will temper the heat greatly, and vines can be trained over the glass in such a way as to break the fierceness of the sun's rays. A north window is not suited to the needs of flowering plants, but some which are grown solely for foliage can be kept there. Ferns, Palms, Aspidistra, Ficus, and Lycopodiums, will do quite as well there as in a window exposed to the sun. English Ivy can be trained about it. Tradescantia in baskets can be hung up in it, and thus it can be made beautiful without flowers if you have a love for "green things growing."

One often sees weak, scraggly plants in the sitting room windows. They seem to have grown too rapidly to be healthy. Two things combine to bring this about; lack of fresh air and too much heat.

If you want fine plants, you must give them plenty of air. They breathe, as you do, and without fresh air they pine and become diseased, the same as you would under similar conditions. Always have your window arranged in such a manner that it can be lowered at the top, thus letting a stream of pure air blow in over the plants. Opening doors from the hall, or some adjoining room into which air can be admitted from without, will let in a supply which your plants will fully appreciate. Never let a stream of cold air blow directly on them, however. Aim to have the cold air mix with the warm air of the room before it reaches them.

The air of the living-room is generally kept too warm and dry for plants. About seventy degrees during the day time and fifteen degrees less at night would suit such plants as one finds in ordinary collections. Aim to keep the temperature as even as pos-

sible. Too great heat forces a weak growth, and has a tendency to blast any buds that may form.

In a room where the air is warm and dry the red spider will do deadly work. In order to keep him at bay the plants must be given as much moisture as possible. Keep a vessel of water on the stove, to evaporate. Shower the plants daily. If the pots are used without saucers, the table on which they stand, or the shelves, can be covered with an inch of sand which can be kept in place by tacking cleats along the edge of the stand. The sand will take up and retain the water which runs through the pots, and thus a steady moisture will be given off from it, for there will be constant evaporation taking place. Keep the air of the room in which the plants are kept as moist as possible, if you want to grow strong, healthy plants.

Showering daily helps to keep the foliage clean, and unless the dust, which settles on the plants when sweeping the room, is cleared away, the pores of the leaves become clogged and the plant finds it difficult to breath, for the pores of the leaves are really the lungs of the plant.

In a moist atmosphere many plants can be grown which would die in a dry air, and all plants do so much better where there is plenty of moisture in suspension that the amateur who wants his plants to do their best will aim to supply it. It has often been observed that fine plants are frequently found growing in the kitchen, while those in the parlor are sickly. The explanation of this is: The kitchen air is moist because of the cooking, washing and other work of that kind going on there, while the parlor air has all the moisture extracted from it by intense stove and furnace heat which there is no moisture to modify.

Stir the soil in the pots at least once a

week. An old fork is a good tool to do this with. This allows the air to penetrate to the roots, and keeps weeds from getting a start. Keep all dead leaves picked off and remove fading flowers. It is a good plan to cover your plants with a thin sheet, or a newspaper, when sweeping. Another good plan is to remove them to the kitchen at least once in two weeks, and give them a thorough washing. This helps to keep down insects and prevents them from becoming incrustated with dust.

Provide yourself with one of the brass syringes or elastic plant sprinklers for sale by dealers in florists' goods. With one of these you can throw a strong stream or a spray of water over and among your plants, and apply it effectively, which you cannot do if you depend on a wisk-broom for a sprinkler. A "sprinkler" is not what you need, but something that has force enough to take the water in all directions and in such quantities with such volume as the case may require.

Turn your plants at least twice a week so that they will get the sun and light on all sides. This prevents their becoming drawn to one side, as they will be sure to do if not turned frequently. Do not neglect to do this if you want good-shaped specimens. Be sure to give all the light possible; don't shut it out from the window by curtains. Let your plants furnish the beauty for the window. Some are afraid of letting in the sunshine upon their plants because it will fade the carpet. If you care more for your carpet than you do for your flowers, give them to someone who is willing to do the fair thing by them, and concentrate your energies on the protection of the precious carpet, but don't attempt to compromise matters between the two, for this will result in failure so far as the plants are concerned.—*Exchange.*

THE LOCUST TREE.

AT Maplehurst we have a dozen fine old locust trees, the kind botanically known as *Robinia Pseudacacia*. They were planted over one hundred years ago by the first member of our family who purchased the old homestead, and they are such rapid growers that now they rival maples and elms of two or three times their age in the wood lot. They are interesting trees, and have some merit for ornament with their racemes of pea-like flowers in early spring and their delicately pinnate leaves. They grow to a lofty height and are not so dense in foliage as to hide distant views; yet as lawn trees they are not very popular, because they are inclined to sucker, they are late in foliage, and they make considerable litter both of flowers and leaves and broken boughs.

But as an investment, the growing of locust trees for fence posts on sandy soil would no doubt be a paying one, and we quote from the Vermont Experiment Station Bulletin a valuable extract on this subject:—

“Every farmer in New England ought to produce posts for his own use at least if not to sell. There are three common trees especially suited for posts—the Red Cedar (*juniper*), the White Cedar (*arbor vitæ*), and the common Locust (*black or yellow locust*). The last will make the quickest growth, is easily started, and best adapted to otherwise worthless soils. Good locust posts will usually be standing long after the man who sets them is gone.

“Believing that the growing of locusts on a fairly large scale for sale as posts ought to prove profitable, the Vermont Experiment station has recently been investigating the question and started some experimental plantations. Preliminary plantings of some nine varieties of trees have been made at intervals since 1897. The outcome is especially favorable in the case of the white pines and the locusts, and a considerable larger plantation of each of these was made in 1902. This trial is being made on the

dryest area of the level sand plain east of Burlington. Pitch pine is the only tree that makes a vigorous natural growth here, although the white pine succeeds fairly well when planted. The locust far outstrips all others, however. Of several thousand seedlings set last spring, when less than a foot high, ninety-two per cent. are now alive and three feet or more in height with leafy branching tops. Seedling trees near by in exactly similar soil have a trunk diameter of five inches and a height of sixteen feet at eleven years of age; others nineteen years old, growing in equally sandy but moister soil are averaging nine inches in diameter at the base, and a clean shaft of twenty-four or more feet, which is sufficient for three fence posts and some fire wood besides. Twenty years from seed will give a crop fit for posts on this last soil, and the coppice growth, following the cutting of the first crop, will ensure a second crop in even less time. The seedling trees cost only \$3.50 per thousand, and can probably be raised at a less expense. Allowing 1000 such trees per acre yielding three posts each once in twenty years, a handsome return is assured. The serious danger and source of uncertainty in locust culture is the borer. Fortunately its worst attacks are confined to the young trees, and if these survive then the danger is soon outgrown. It is said that the use of heavier foliaged trees for one-third the plantation in mixtures with the locusts, will reduce this danger from borers. White pine is considered the best tree for this purpose in sandy soil. The reason for the especial success of the locust on barren soil is that as a member of the pea family it secures its nitrogen indirectly from the air. It thus gains its own supply of this element, and at the same time enriches the soil where it grows. This latter result is shown by the fact that grass around locust trees may appear even greener and more luxuriant than in the open field.”



The Canadian Horticulturist

COPY for journal should reach the editor as early in the month as possible, never later than the 12th. It should be addressed to L. Woolverton, Grimsby, Ontario.

SUBSCRIPTION PRICE, \$1.00 per year, entitling the subscriber to membership of the Fruit Growers' Association of Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution of plants and trees.

REMITTANCES by Registered Letter or Post-Office order addressed The Secretary of the Fruit Growers' Association, Parliament Buildings, Toronto, are at our risk. Receipts will be acknowledged upon the Address Label.

ADVERTISING RATES quoted on application. Circulation, 5,500 copies per month. Copy received up to 20th.

LOCAL NEWS.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events or doings of Horticultural Societies likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of Horticulturists.

ILLUSTRATIONS.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, etc.; but he cannot be responsible for loss or injury.

NEWSPAPERS.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

DISCONTINUANCES.—Remember that the publisher must be notified by letter or post-card when a subscriber wishes his paper stopped. All arrears must be paid. Returning your paper will not enable us to discontinue it, as we cannot find your name on our books unless your Post-Office address is given. Societies should send in their revised lists in January, if possible, otherwise we take it for granted that all will continue members.

ADDRESS money letters, subscriptions and business letters of every kind to the Secretary of the Ontario Fruit Growers Association, Department of Agriculture, Toronto.

POST OFFICE ORDERS, cheques, postal notes, etc., should be made payable to G. C. Creelmau, Toronto.

Notes from the Horticultural Societies

LINDSAY.

The officers for the year were duly elected at the annual meeting. The secretary's report showed receipts of \$274.03, and an expenditure of \$213.39, leaving a balance on hand of \$60.64. During the year they put in circulation 94 copies of horticultural literature and 2500 bulbs; also 300 plants of different kinds were distributed among the members. This society is doing a good work, and more should help by becoming members.

PARIS.

The Directors beg leave to present their Fourth Annual Report for the year ending 31st December, 1902.

Our membership for the past year was 79, being an increase of 15 over the previous year.

In spite of very vigorous attempts made to arrange an excursion to the Ontario Agriculture College at Guelph, we were unable to succeed, the excuse being given that such excursions could only be permitted to farmers' institutes. As a result we

begin the new year's business with a balance on hand of only \$10.76 instead of \$57.47.

Our usual Flower Show was held on August 8th and 9th, and was an even greater success than in previous years in point of attendance and exhibits. The receipts at the door being \$14.56 and total expenses \$37.74.

In this regard we think it advisable for the Society to consider whether the Flower Show should be open to all or to members only, and whether admission fees should not in future be charged.

Nature study is a branch of modern education which is now receiving a good deal of attention, and in pursuance of that idea, your Directors at an expenditure of about \$15 took in charge the grounds of South Ward School, planted them with various Canadian shrubs and trees, had them all properly labelled, and handed them over to the Board of Education to remain for all time an object lesson to the young, and an incentive to our School Boards and Town Council to continue in the work of civic improvement.

While we will not have as much money to spend

in the coming year, we hope our successors will take some further steps to improve either the school grounds or the public parks and streets. Such a Society as this should take the lead in such work, and by its example encourage those outside the roll of our membership to beautify their own residences as well as the streets and parks of what is said to be the prettiest town in Ontario.

A large distribution of trees, plants, flowers and bulbs was made to our members at a cost of \$100.44, and on the whole satisfaction was expressed with the premiums. As a result of our efforts many new plants and flowers have been introduced into the homes and lawns of our town.

Your Directors wish to point out that although the objects of a Horticultural Society are to encourage a love of nature in regard to one branch of the vast number of subjects which come under the head "Nature Study," and which includes that which is most beautiful and good, and which has a more elevating and ennobling tendency than perhaps any other phase of natural science, yet, among in list of members we can find only one school teacher and only one clergyman, and a retired one at that, out of over a dozen teachers in town and a half dozen clergymen. Do we think too much of our Society or do they fail to appreciate a good thing when they see it?

Mr. Geo. Champion of Toronto, very kindly acted as judge at our Flower Show and delivered a very interesting and instructive address on the faults and mistakes in potting plants.

All of which is respectfully submitted,

(Sgd) JOHN ALLEN,

Paris, Jan. 14th, 1902.

President.

LONDON.

A very satisfactory annual meeting was held on Wednesday evening, Jan. 14th, the Rev. Dr. Bethune, President of the Society in the chair. The Officers and a Board of Directors were unanimously re-elected. The financial statement showed a balance in hand of \$60.16. After an address by the President, in which he reviewed the work of the past year and suggested new matters that might be taken up during the coming season, the report of the Directors was read as follows:

The Directors of the London Horticultural Society beg to present their third annual report.

During the year 1902 they have held nine meetings for the transaction of the business of the Society, in addition to the annual meeting on the 8th of January.

Two lecturers, commissioned by the Provincial Association, addressed the pupils of the public schools on the 14th March, and in the evening a public meeting in the Collegiate Institute. The attendance at the latter was very satisfactory, and much interest in the subjects discussed was shown by the audience.

On the 25th of April a paper was read by request before the London Teachers' Association by Mr. Gammage, and addresses were delivered by Messrs. Fox and Balkwill on Horticultural Subjects. On June 15th the President addressed the Sunday School at the Chalmers' Presbyterian Church on the occasion of a distribution of flowers and plants to the pupils.

Three very successful flower shows were held during the summer months in the City Hall, which was kindly placed at the disposal of the Society by the Mayor and City Council.

The first show was held on the 7th and 8th of May, when a very fine exhibit was made of tulips, narcissus and other spring flowers. Mrs. Labatt kindly contributed an orange tree in fruit and several other specimen plants, and Mrs. Macfie a large number of cut flowers.

The second show was held on the 24th, 25th and 26th of June, the time being extended to a third day in consequence of the very wet weather which prevailed and greatly reduced the attendance. The exhibit, however, notwithstanding the cold, wet season, was very fine, the display of roses being especially striking. About forty of our members contributed flowers of many varieties, and to them is due the success of the exhibition.

The mid-summer show, the third of the season, took place on the 6th and 7th of August and was considered to be the most beautiful and the richest exhibition which the Society has yet given. This was largely due to the magnificent display of hybrid gladioli of the "Pan-American" strain contributed by Mr. H. H. Groff, of Simcoe, the master hybridist and famous grower of these magnificent flowers. He sent about a thousand spikes displaying every variety of color yet produced and great perfection of shape and size. Many of our members also exhibited Gladioli, which it would be difficult to surpass anywhere. Among these may be mentioned the grand array sent by Mr. Paine, and very fine collections by Mr. W. E. Saunders, Mr. C. J. Fox, Messrs. Gammage and Sons, Mr. E. J. Liddicoatt, W. Gilbert and others; of other flowers then in perfection a splendid display was made by a large number of our members, the excellence and variety of which was most creditable to the exhibitors, and a cause of delight and wonder to the large number of visitors.

A collective display of autumn flowers was made by the members of the Society at the annual exhibition of the Western Fair during the week beginning Sept. 15th. This was not in competition for any prize, but was intended to show the public, and especially visitors from a distance, what could be done in the way of flower production at that late period of the year. The blooms were numerous and very tastefully arranged, and attracted great attention from the throng of visitors to the Horticultural Hall. The society was awarded a diploma by the directors of the Fair in recognition of the excellence of the display.

The directors again offered three prizes at the Western Fair for the best collection of cut flowers exhibited by members of the Society. This brought out a better competition than last year, and prizes were awarded to Mrs. Morgan and Mr. Wm. Moore.

During the year the members of the society received as premiums, in addition to the plant from the Fruit Growers Association, a bulb of *Lilium speciosum* and seeds of *Dolichos* and *Salpiglossis* in the spring, and in the autumn half a dozen *Hyacinth* bulbs. Mr. Gammage, with great generosity, also presented each member with four named varieties of *Chrysanthemums* in pots.

An invitation was sent to all our members to at-

tend the 39th annual meeting of the Entomological Society of Ontario, which was held here on the 29th and 30th of October. A fair number availed themselves of the opportunity of hearing the interesting and instructive addresses at the public meeting in the Normal School building.

The Directors have much pleasure in recording their high appreciation of the public spirit and generosity of Mr. Adam Beck, Mayor of the City, in offering \$100 for prizes in a garden competition. A very large number of entries were made and the results were very pleasing not only in the care and improvement of the premises of those competing, but also in the effect upon their neighbors who were influenced by the examples thus set and did much to keep their own grounds in good order.

The Directors feel that they may justly congratulate the Society on the good work it has accomplished in the City of London, during the three years of its existence. Testimony is borne on every hand to the noticeable improvement to be seen in all directions in the care of lawns and boulevards, and the cultivation of flowers and shrubs. We should all be encouraged by this success to do everything that lies in our power to promote a taste for beauty amongst our citizens of every grade, and to lead them to vie with one another in making the surroundings of their residences and places of work and business as attractive as possible.

All of which is respectively submitted,
 R. W. RENNIE, Sec'y-Treas. C. J. BETHUNE, President.

HAMILTON.

The annual meeting of the Hamilton Horticultural Society was held in the Museum of the Public Library, Jan. 14th, 1903, at 7.30 p.m.

The Secretary-Treasurer reported a balance on hand of about \$204.00. The Society began the year well, three open meetings having been held. In November an address by Mrs. Iza Gilchrist; in December, "Best Flowering Shrubs," by Mr. Roderick Campbell, of Niagara Falls, illustrated by numerous specimens of decorative winter plants; in January an address by Mr. J. O. McCulloch on "Popular Garden Flowers," illustrated by some seventy-five lantern slides made during the past summer.

Mr. A. Alexander, who has been President of this Society since its inception, has resigned the position and Mr. J. O. McCulloch has been elected in his place.

J. M. DICKSON, Secretary-Treasurer.

OTTAWA.

Ten years ago yesterday the Ottawa Horticultural Society was organized in the City Hall with a membership of about twenty-five. The annual meeting held last night showed how it had grown and become prosperous in these ten years, for the membership last year numbered 239, while the receipts were \$743.

Mr. R. B. Whyte, who has been President of the Society for the past three years, made a short statement of the work done during the past year

and how the Society had progressed. He gave a comparative statement of how in the past three years the interest had grown as follows.

	1890	1901	1902
Receipts	\$649	\$671	\$723
Disbursements	\$562	\$544	\$654
Number of Entries.....	772	735	725
Attendance	720	829	1023
Number of Members....	186	213	239

Mr. Whyte thanked the members for the honor they had done him in electing him to fill the position of President for three years, and assured the new President of his hearty support.

Mr. W. T. Macoun, in a short address, voiced the feelings of the members towards Mr. Whyte, whose untiring efforts during the past three years has made the Ottawa Society second to none in Canada.

It was decided to branch out and educate the school children of the city to take a greater interest in flowers, and to hold a show in 1904 at which school children should exhibit plants grown from bulbs given by the Society. It was decided also to hold a General Bulb Show open to members in this month.

WOODSTOCK.

The Horticultural Society met last night in the Council Chamber with a fair attendance. G. R. Pattullo presided. The President's and Secretary's reports were read, both showing a very satisfactory condition of affairs. Their former report showed a balance on hand of \$115.15. Their total receipts were \$364.61, made up of a balance from last year of \$116.28 receipts from the Legislative grant, subscriptions, flower show, etc. The disbursements amounted to \$249.46 in all. Among the items of expenditure were the cost of the flower show and distribution of plants to the public school children. The sum of \$61.38 was expended in the latter worthy cause, which was found to be a most successful experiment.

Mr. Pattullo, who has held the office of President for the past two years, on retiring from that office in favor of R. W. Woodroffe, in recognition of his valuable services to the Society was unanimously elected Honorary President.

Mr. Pattullo, in addition to the suggestions made in his presidential address, outlined a scheme for a "suburban drive." He thought by systematic improvement upon some of the outlying streets, such as Vansittart avenue, planting of trees, draining, grading and other improvements, that gradually this desirable object might be gained.

Several members reminded the President of the large outlay such a course would entail.

Mr. Pattullo replied that the money could be raised between the property owners and the Council. Of course it would take some time to provide a suitable scheme. He wished merely to mention the matter as a suggestion.

Mr. Woodroffe deplored the present condition of Vansittart Avenue and Victoria Parks. They had been kept in a disgraceful condition last year. He proposed that a committee be appointed to in-

terview the Council regarding this matter. The matter will be dealt with by the new board.

Secretary J. S. Scarff gave the members some of his observations at the recent meeting of the Ontario Fruit Growers' Association at Walkerton. The meeting had been one of the most important ever held and Mr. Scarff was again appointed a member of the board.

The following was the President's annual address:

At the close of another year in the history of our Society it is satisfactory to report that some progress has been made. The work of this and kindred societies is usually done by comparatively few of the members who have a special love for it. Under these circumstances progress is generally slow, but in our own Society in recent years there is apparent an increasing and more general interest.

The Annual Flower Show of the year was on a larger scale, the exhibits were more numerous, the market sheds were better suited therefore and they lent themselves more easily to tasteful decoration with arrangement of the several exhibits. These features, together with excellent music provided, made the Flower Show the most successful, both in point of merit and attendance, and also to the afforded pleasure to visitors, that the Society has yet held.

The plan of holding cottage or garden meetings, begun the previous year, was continued during the summer. Two very pleasant, interesting and helpful meetings of the Society were thus held at the homes of T. H. Parker and William Grey, Esquires, two of the earliest and most prominent of Woodstock's horticulturists. At the latter, Mr. Grey contributed some interesting reminiscences of pioneer horticulture and horticulturists here. The Society are also indebted for a very pleasant afternoon spent at the greenhouses and surroundings of Doyle & Son's, where they saw a large, varied and fine bloom of chrysanthemums, geraniums and other annuals.

BEAUTIFYING OF SCHOOL GROUNDS.

ADDRESS BEFORE THE WOODSTOCK HORTICULTURAL SOCIETY BY MR. G. K. PATTULLO, PRESIDENT.

The Society has enjoyed the privilege also of hearing several valuable papers contributed by members during the year, notably those of our lady friends, Mrs. Finkle, Mrs. Hoare and Mrs. Davidson. The Secretary as District Representative in the Provincial Society is still a useful link between the latter and the local Society, and our influence was further extended by a paper recently read by the president before the County Teacher's Convention upon the subject of Beautifying School Grounds:

"But perhaps the most important work done by the Society during the year was the plant and flower distribution among the children of the public schools—from seventy-five to a hundred children of all ages received free from the Society some common varieties, such as asters, zinnias, phlox, petunias and geraniums, to be planted and cared for by themselves. The result was most satisfac-

tory. The children interested themselves in the care of the plants, and there was thereby an increase of about a hundred well-kept and tastefully arranged little flower pots in the city during the summer. Quite a number of bouquets therefrom, neatly arranged, were presented at the Autumn Flower Show, and in the reports made thereon by the children, clamor vigorously for more plants next year.

"It will be seen from the above that the Society have some reason for congratulation upon the work being done by and through its instrumentality. It has done something, but much more remains to be done. The awarding of prizes for cottage and flower gardens and well-kept grounds, and of prizes to the school children for flower and vegetable plots, the plant and flower distribution among the children of the public schools, the promotion of tree, shrub and flower planting upon our school and other public grounds, the holding of cottage and garden meetings of the Society, which are pleasant and practical object lessons to those who attend, the reading of timely and useful papers upon subjects of practical interest, the hearing of lectures by experts from the Provincial Society—all of these things, which the Society has done during the past two years, are useful and educative; they have awakened a wider interest in the subject of fruit growing, floriculture and kindred topics in our community, but a large field still remains for our attention, occupation and active operation.

"The citizens of Woodstock frequently boast—and not without cause—that they have a beautiful city. Nature has done much for it, and the hand of man something. But, though a beautiful little city, it is not yet the city beautiful. To make it so should be the aim of our Society and all its members. Much remains to be done. The streets are not yet all tree lined, nor have they all well-kept boulevards. There are not yet enough parks for the convenience and pleasure of our people and their children, and those that we have are inadequately, indeed badly cared for. Our church and hospital grounds are not yet fully equipped with trees, shrubs, climbers and flowers. Only two of our school grounds have been improved in the same direction, and our cemeteries are still capable of improvement and beautifying. Then I should like to see a suburban avenue, which when graded, drained and tree-lined would afford a delightful drive or wheel all about our beautifully and picturesquely located little city. This should be begun at once. It need not necessarily be an expensive undertaking. Existing streets could be utilized, and I am satisfied that the active interests of citizens who reside in the outlying districts of the city, could be enlisted in a project, the completion of which would improve their properties and provide for them and for their children much pleasure. I venture to commend these matters to the favorable attention of my successor and his colleagues in office, and for whom I solicit an even more kindly and general support than has been extended to me as president.

"It is gratifying to learn from the Treasurer's report that although our expenditures have been rather more generous than usual, the balance on hand is still the same as last year."

WALKERTON.

The Directors of the Walkerton Horticultural Society, in presenting their first annual report to the members of the Society since the affiliation of the Society with the Ontario Fruit Growers' Association, congratulated the Society on its prosperity during the year 1902 and that the Society had affiliated with the Fruit Growers' Association.

Bearing in mind the objects of the Society, your Directors made arrangements early in the year for and held a meeting in the Town Hall, Walkerton, on Thursday evening, March 13th last. This meeting, the first of its kind in town, was a perfect success. The Walkerton Orchestra provided good music. The speakers of the evening were Mr. T. H. Race, of Mitchell, and Mr. L. Woolverton, of Grimsby. The former gave a delightful and inspiring address on the influence of flowers upon the life and character of children, and the latter upon the subject of landscape art as applied to home and school grounds.

On the first of August last the Society held a Flower and Plant Show or exhibition in the Town Hall. No prizes were offered. There was a large and fine exhibit of flowers and plants, and those who attended were highly pleased with the entertainment and expressed the hope that the Society would make the exhibition an annual event. School children were admitted free. Each member of the Society received free three admission tickets. There was taken at the door \$4.70. After the close of the exhibition all the cut flowers with the consent of the exhibitors, were expressed to the Sick Children's Hospital in Toronto, where they were thankfully received. We hope that the directors of 1903 will hold another exhibition during the coming summer, if the season at all proves favorable, and that it be held later in the season than last year's. Every member of the Society, as well as every lover of flowers, should make arrangements early in the season so as to be prepared to be an exhibitor, and we hope every one will assist in making the exhibition of 1903 a most enjoyable success.

During the year 1902 this Society had eighty-nine members who each paid \$1.00, and as required by sub-section (a) of section 11 of the "Agricultural and Arts Act" of Ontario, we hereto annex the names of the members. We feel confident that if the objects and benefits of the Society become better known in the community the membership of the Society will greatly increase. Each of the members for the year 1902 received monthly a magazine, "The Canadian Horticulturist," and as a premium with that magazine each member received one of the following plants under its plant distribution for 1902, viz:

- (a) Plant called Iceberg, a new white blackberry.
- (b) Flowering shrub, *Pentzia Lemoinei*.
- (c) Grape vine, Campbell.
- (d) Hardy flowering shrub, Siberian Pea Tree.

The magazine was read with pleasure and profit by the members.

Your directors also purchased from Mr. Sherrington, of the Experimental Fruit Farm at Walkerton, and from Mr. W. E. Norrish, at Walkerton, a quantity of fruit trees, shrubs, vines, plants and

bulbs, and last spring distributed them among the members, viz: 13 palms, 144 tuberous rooted begonias, 6 caladiums, 12 spotted leaf callas, 12 cyclamen, 36 tigridias, 9 cannas, 84 gladioli, 56 roses, 30 Japanese lilies, 8 clematis, 8 Madeira vines, 8 cinnamon vines, 15 cherry, 42 plum and 6 apple trees, 6 currant bushes, 5 dew berries and 60 black and red raspberries. During the fall of 1902 your directors distributed among the members a quantity of flowering bulbs, viz: 150 hyacinths for pot culture, 300 bedding hyacinths, 1500 tulips, 600 crocus, 300 narcissus, 25 Chinese sacred lilies.

The Ontario Fruit Growers Association favored our town and society by holding its annual meeting here on the 1st, 2nd and 3rd December last, and the executive committee of that Association recognizing the fact that the Horticultural Societies of Ontario had been a great assistance to the Fruit Growers' Association held two special sessions for those interested in flowers, etc. Those who attended these meetings received a large amount of pleasure and benefit from them. The papers read and addresses given were all by gentlemen of culture and experience, and as a stenographer was present to report the proceedings and addresses the members of our Society will receive the benefit of them in the coming publication of the Annual Report of the Fruit Growers' Association. Every member for 1903 will receive a copy of that report.

Your Directors through Mr. Norrish purchased a number of plants and bunting to decorate the hall. The plants were sold at a small loss after the meeting, and the bunting remains on hand for future use for exhibition purposes. The thanks of this Society are due to Messrs. Dale, of Brampton, who gratuitously supplied all the beautiful and welcome roses, which made such an elegant display on the table in the room where the Horticultural meetings were held.

During the one of your directors, Mr. D. MacGillivray, Manager of the Canadian Bank of Commerce here, was moved to a similar position in Windsor, Ont. Your Directors and the Society have suffered material loss by the removal of Mr. MacGillivray who took an active part in the organization of this Society, and spent time and money in making the flower show of 1902 a success, and also in planting trees on our streets. As he is a budding botanist and found of flowers and plants, he encouraged others in the cultivation of their gardens, and was a good example to them as well as to those fond of civic improvement. He was of great service to us.

We would recommend that the Directors of 1903 take early steps to induce the Town Council, Board of Trade and Trustees of the High, Public and Separate Schools to act jointly with the Directors in the matter of planting and taking care of our street shade trees, and induce the Department of Militia and Defence to remove the old and dilapidated board fence at the old drill shed ground, and level and seed the ground. The grounds are near all the schools in town as well as to the county public buildings and churches, and in their present state are an eyesore to every citizen as well destroying the beauty of the adjacent public buildings and private residences.

Your Directors would also recommend that the

Town Council declare one-half of Arbor Day or another earlier day if suitable according to the season as a public holiday for the purpose of enabling the members of this Society and citizens generally to plant shade trees and flowering shrubs on our streets and public park known as the Bend and principally on the three streets around the old drill shed grounds (providing the authorities remove the fence and otherwise improve the appearance of the grounds) and generally to promote out-door art and public beauty.

We would also recommend that the Directors offer prizes for outside window box gardening and hanging baskets during the coming season.

OUR BOOK TABLE.

"MILLIONS OF TREES" is the title on the front cover of a very attractive catalogue issued by our advertiser, D. Hill, the veteran grower of evergreens at Dundee, Ill. Mr. Hill has been "at it" for more than forty years, and is known not only all over this land, but in many foreign countries. He is a native of old England, where forestry is more intelligently understood than here. He grows all his stock from seed and develops them into thrifty, hardy trees. Those who deal with him once do so again and again as need arises. Write for his catalogue and mention Canadian Horticulturist when you do.

CATALOGUES - CACTI AND SUCCULENTS, I. H. Cilianzer, Canadian Cacti Specialist, Woodstock, Ont.

REPORTS.

FAIRS AND EXHIBITIONS, 1902, Ontario Dept. of Agriculture. FARMERS' INSTITUTES, 1901. Part II Women's Institutes. TRIAL PLOTS OF GRAIN, FOODER CROPS, etc. Dr Saunders, Central Experimental Farm, Ottawa, 1902.

PRICES CURRENT.

AGRICULTURAL CHEMICALS AND FERTILIZERS.—The market continues firm and steady, with an upward tendency. Southern business is picking up, and prices are well maintained. Nitrates of soda remain strong and sulphates of ammonia are a little stiffer.

AMMONIATES.

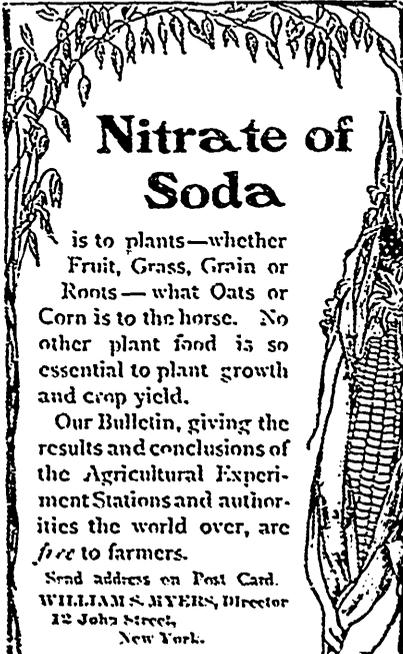
Nitrate of Soda, spot per 100 lbs.	\$ 2.05 a	\$2.10
Nitrate of soda, futures, " " " " " "	2.00 a	.....
Cottonseed meal, p. ton, c. 1 f. N. Y.	27.00 a	28.00
Sulph. ammonia, spot	2.05 a	2.07 1/2
Sulph. ammonia, shipment	2.05 a	2.07 1/2
Dried blood, N. York, low grades,	2.45 a	2.47 1/2
Dried blood, Western, high grade, fine ground	2.57 1/2 a	2.60
Fish Scrap at New York	2.55 and over.	
Tankage, per unit.	2.57 a	2.65 and over.

PHOSPHATES.

Acid phosphate, per unit.	55 a	60
Bone black, spot, per ton.	16 00 a	16.00
Ground bone, per ton.	21.00 a	23.00
S. C. phosphate rock, ground, per 2,000 lbs.	5.00 a	5.50
S. C. phosphate rock, undried, f. o. b. Ashley River, 2,400 lbs.	3 00 a	3.25
do do dried.	3.25 a	3.50
Florida, high grade phosphate rock, f. o. b. Fernandina, per ton.	6.50 a	7.00
Florida land pebble phosphate rock, f o. b. Fernandina, per ton.	4.00 a	4.50
Tennessee phosphate, f. o. b. Mt. Pleasant, domestic	3.25 a	3.50
do do foreign.	3.75 a	4.00

POTASH.

Kajnit, future shipment, per ton.	9.05 a	...
Keiseret, future shipment, per ton.	7.35 a	7.50
Mur. potash, 50 p. c., future shipm t	1.80 a	....
Double manure salt 148 a 49 p. c. less than 2 1/2 p. c. chlorine, shipment, per lb.	1 09 a	...
	Basis 48 p. c.	
High grade manure salt (90 a 93 p. c. sulphate potash), shipment.	2 05 a	.....
	Basis 97 p. c.	
Manure salt, in bulk, 20 p. c. per unit, O. P.	62 a	64



Nitrate of Soda

is to plants—whether Fruit, Grass, Grain or Roots—what Oats or Corn is to the horse. No other plant food is so essential to plant growth and crop yield.

Our Bulletin, giving the results and conclusions of the Agricultural Experiment Stations and authorities the world over, are free to farmers.

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